New Cosmology Model Apart From Space Expansion And Dark Energy: A New Gravitational-Relativistic Effect Of A Primary Gravitational Flooding From A Distant Universe And A Linear Volume-Gravitational Effect

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Summary: An alternative model explanation for the "faster than light" redshift of the spectrum of distant cosmic objects is presented. It says that from even more distant masses for the first time after their formation, particles of gravitational force mediator arrived quickly and gradually for the first time and formed an increasing gravitational background field in contemporary history. As a result, a background gravitational field of different strength over time is superimposed and consequently, relativistically comparative redshift measurements on old spectra compared to locally newly generated spectra are explained gravitative relativistically. The result is that no space expansion hypothesis and no dark energy are required. A super-light hypothesis due to an expansion of space is omitted. Furthermore, the hyper-distant masses cause a volumetric-gravitational attraction effect that increases linearly with distance, which conforms to the classical law of gravitation, whereby space expansion through dark energy is also not required to explain the diverging cosmic mass objects.

It is known that Hubble also gave chances to another explanation of the faster-than-light redshift of the light spectra, and rather reassured itself. As the only alternative, a "light fatigue hypothesis" was proposed over the years, but was quickly refuted. The space expansion has become the valid teaching of modern astrophysics, although a paradox super luminary speed of the distant objects had to be allowed for it. The hypothetical space expansion at faster than Speed of Light became a confirmation of the theoretical solutions of the GTR, the General Theory of Relativity, which were given by A. Friedman in 1922 and G. Lemaitre in 1927 as a mathematical solution.

Nowadays, using the Hubble Constant and his method, redshift values of a maximum currently $z = 11.1$ *were determined* from observations through the Hubble telescope, which is ascribed to a hypothetical superluminal speed of space expansion and is now a generally recognized consensus among astronomers [1]. More back ground a reader can get in some literature about expanding universe like [2].

The present physical communication nevertheless contains surprising results of a new hypothesis on the excessive red shifts of distant, older star spectra, which can open up a new perspective on the fundamental physics of the universe to an inquisitive physicist.

A single assumption needed

The gravitational charges, i.e. all particles that have mass properties, fermions and even photons, i.e. all real particles, only emerged after a period of time and before that there was no gravitation. Otherwise, Newton's theory of gravity is sufficient and the GTR does not provide any counter-arguments against our hypothesis. And they emerged in the great, presumably infinite space, extremely far apart of each other.

Gravitational Flood Relativity

As a starting point, we use known gravitational relativistic effects of the General Relativity Theory, the GTR, which are given solely by mass presence, such as time dilation and length contraction. The greater the gravitational field strength, the greater are these gravitational-relativistic effects locally where identifiable light spectra were emitted from the atoms of chemical elements of a star. Time flows more slowly on a star or black hole than it does on the small, lighter earth. And our spectrometers compare our spectra of the same elements with the ancient ones from space.

While Einstein's ART uses only the Riemannian spatial geometry phenomenologically as the only gravitational force transmission, the valid particle physics in the S*tandard Model, SM,* provides separate force transmission particles for all forces and the gravitons are supposed to transmit the gravitation. They are considered to be fast of speed of light, having no rest mass and with a spin of 2. We will not need the spin in our considerations and use gravitons as a force transmission concept. But the concept is abstract and allows also to think in terms of GRT as a room structure.

It is very likely that the gravitons can superimpose one another, appear summed up and pass through one another unhindered. These are our assumptions, which seem logical based on the considerations that a shielding of gravity has remained unknown. Gravitation is an all-pervasive force effect and acts on masses as a gravitational charge.

Consequently, these graviton fields continuously emitted by all mass particle objects form a gravitational *background gravitational level* on which the stronger gravitational fields of the local cosmic central mass objects, which have satellites, are placed on top. Because this *background gravitational level was allowed to be directed* very evenly, almost homogeneously from all directions, cancelling each other out, we have not noticed anything so far, only the effect of the central “ponderable masses” near to us. Gravitation acts directly on an elementary particle and cannot tear it apart while we are not aware of it. Our sun and planets add their gravitational fields from gravitons to the basic gravity level*, which we do not notice as compensated in our observations. We on earth don't even notice the moon and the sun as a gravitation, all the less our galaxy gravity and even more distant G-fields.*

In the current model of cosmology, it applies that there was a cosmological beginning in a *big bang*, whereby it is not regarded as a point-explosion understood in a literarily naive way, but began everywhere in space as a birth of space-time and matter. In the current cosmological standard model, space is considered to be infinite. Consequently, the generation of this infinity and the mass particles must have started later at some point in time and space. And only then did they begin to send out gravitation - as graviton particles.

Because space is very large or even infinitely large, one must assume that such particle formation began everywhere locally and not entirely at the same time.

If in 100 billion Light Years distance a quantity of particles with a mass charge was born for the first time, how long does its gravitation in the form of light-fast gravitons take to reach the earthly galaxy space? There is still a lot of waiting time for it, but it will definitely come.

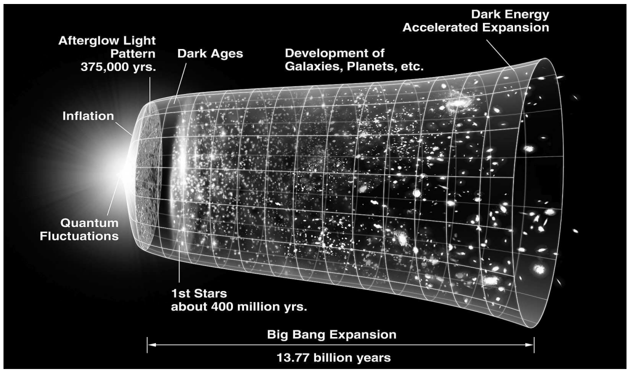

Fig. 1. Well-known cosmological model through an Expansion Model Bell [3].

As far as thought, only one small thing remains to be understood: in the past there were probably fewer gravitons than an underlying Basic Gravity than it was later and in our time when it first arrived. According to this, the ancient spectral photons were emitted under other relativistic ancient conditions and have therefore now arrived at our location, apparently redshifted 'faster than light'? That's the hypothesis.

Hypothesis from the Beginning of the Gravitational Sources

If this assumption is fulfilled, it only remains to explain why the background gravity had grown over the time. Since we still assume a beginning of the universe, there must have been the first mass particles for the first time at some point . In the standard model, it happened in the first few seconds after the Big Bang and then on and on. Before that there weren't any, and then somehow they emerged and started to send out gravitons for the first time. The universe must and can be much larger than previously thought. In the distance there were emerging mass particles so far away that their graviton fields traveled through gigantic distances at the speed of light for a very long time and they gradually arrived in other parts of the universe with a time delay and raised the basic gravity level, like a gravitational flood. There were still more distant mass sources whose G-fields were arriving for the first time. After that there is a constant flow of gravitons from those mass sources and this does not add anything new. Only this first arrival of new hyper-distant G-fields takes place until today and therefore the redshift had grown over time. Because the mass distribution is relatively equal, it corresponds proportionally to the Hubble constant that is valid today for the assumed hypothetical space expansion with a faster than light velocity $v > c$. Hence a *proportionality of the redshift with the distance* to distant galaxies. It is above all the temporal distance that corresponds proportionally to spatial distance, since the speed of light measures both.

In an abstract model of this model, we can imagine a ship floating on the lake and a constant flood. The water rises and rises. If no one measures the increasing water depth, no one on the ship will notice that the water level is rising.

Today we have reached more background gravity from distant masses “below” than it was the case billions of years ago. For us locally it doesn't matter because the earth and sun exist on the same local background gravitational field, more precisely a multitude of summed G-fields, which are compensated from all directions.

All relativistic effects between sun and earth have the same distant sum G-fields as a background and their differences are only formed by their local sum differences. Background fields are omitted from the calculation because they are the same.

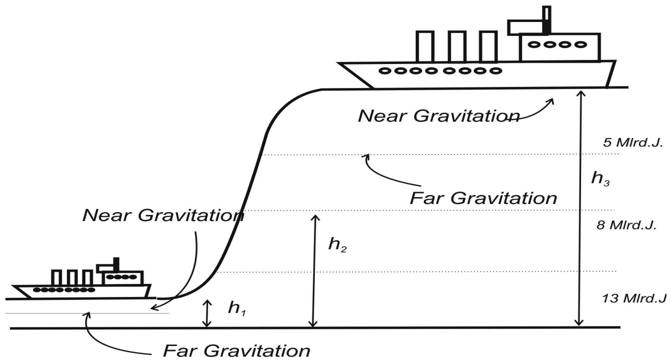

Figure 2. A ship on the water as a model of relict Gravitational Flooding.

But thanks to the model, we immediately showed that our local gravity should become overgrown, i.e. stronger than the ancient one. That would mean that the gravitational-relativistic effects should be stronger today with us compared to the relict old light.

But we take a closer look. In terms of energy, masses are heavier when they are more relativistic, so an old photon would have to be weaker, i.e. redder, than its currently emitted spectrally assigned one. It gets very tricky to interpret. The ART did not explain it to us in more details. In any case, there must be relativistic effects. At the moment we can only cite that and demand by phenomenon that this causes a gravitational-relativistic redshift. If it were the other way around blue, then the expansion of space would have to overcompensate for it and be even stronger instead of being completely eliminated.

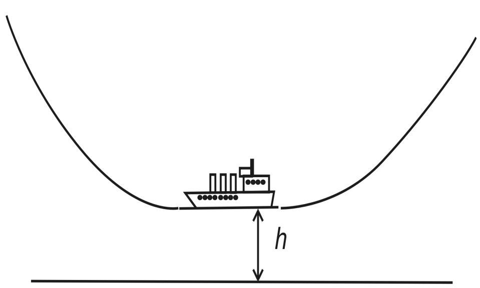

Fig. 3. Hyper remotely primary gravitational waves are still on the way to us, here's a future outlook.

Here is another model of a ship, our *World Bubble*, which floats on a gravitational ocean that has been reached, and gravitational tides are increasingly arriving from a distance from all directions. The accelerated growth of the bell curve shows cheerfully that there can still be a lot. Fortunately, it can't hurt us.

We swim “deeper” in it. In figure 4 we see under number *1* as a small world-bubble of many of, our visible ones World Bubble with approx. 2 x 14 billion. light years to the extent of a subspace of a much larger imaginary whole-universe.

The number of other galaxy-worlds like our visible one can be arbitrary to infinite. The masses increase with distance as r^3, while Newtonian gravity only decreases with $1/r^2$. So they will stay a linear increase of gravity by distance r, which produce a force puling outside all masses.

We can determine an absolutely symmetrical situation for each of these World Bubbles as for our earthly number 1. The first-time gravity runs to everyone with the speed of light from all directions and they are each “in the center” of the now much larger space, which we call „whole world“. This is due to the symmetry of the arrangement, because for everyone it results in the distant World Bubbles.

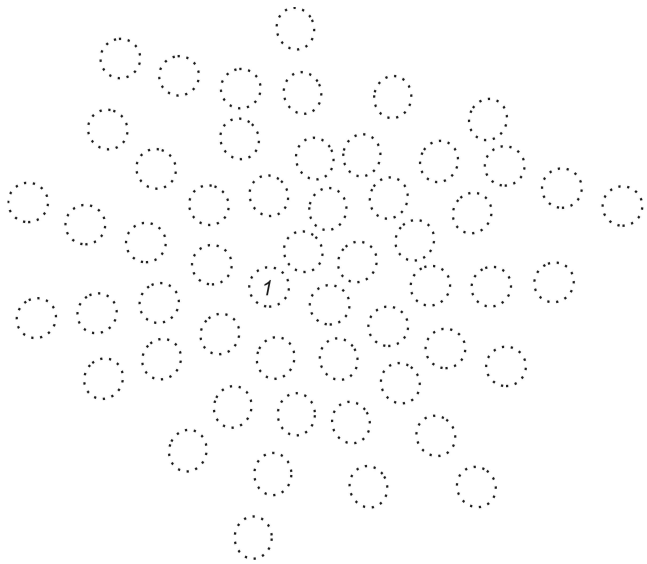

Fig. 4. A multitude of other still invisible "World Bubbles" and 1 our World Bubble building together a „Whole World".

At the same time, the masses in each World Bubble can move outwards under the linear volume-gravitational force, they do not disturb and have a long way to the next World Bubble . The terms are still changing.

Volume Gravitational Effect

If one assumes that the mass distribution must be roughly the same there in the dark, then it is certain that in a volume the masses increase with the distance to the power of 3. If we use the same telescope in all directions, the result is a *spherical visibility sphere* with a radius *r* and a volume of

$$V = \frac{4}{3} \cdot \pi \cdot r^3 . \qquad (1)$$

We are not interested in the constant factor of gravity, but only in the radius r^3, because this increases proportionally to the increase in masses in the volume. So if there is 1000 times as much behind our viewing horizon, then there must be 1E9 times more masses there than there are in our World Bubble, all of which came very far and therefore their light-fast graviton fields gradually arrived at us and still more and more distant ones arrive. But if it goes a million times further, then the mass amount would be 1E18 more than our visible masses. Each of these "World Bubbles" has equal rights in space and the same applies to every place whole world.

It is a discovery of the effect obviously present. Otherwise one would have to assume that gravity has always been there and that no new masses were born later. Astro-physicists know that matter and stars were born. How is another question.

The short dotted arrows pointing outwards in Figure 5 indicate the distant gravitation. This can be understood as arriving from all directions. We have left all other directions criss-cross as compensated.

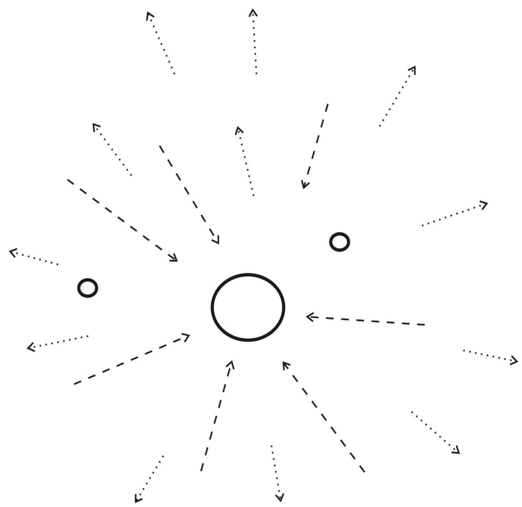

Fig. 5 . Local and distant gravitational fields.

There is a star and 2 planets around it, like the sun and earth. The long dashed arrows indicate the attractive gravitation of the sun, which acts on the planets.

The sum of the local G-fields due to background gravity can only be perceived in comparison to ancient cosmological prehistoric times using old red-shifted spectra.

The background G-fields are coming form all directions evenly.

Mountain Flooding Model

In contrast to figures 2. and 3. with a sea ship flooding model, we see mountains in figure 6. as abstract images of the stars and planets and a lake flooding them in valleys. Under a) this background gravitational lake was shallower in the relic past, than today - shown in b) . For a relative local comparison in our time among our cosmic mass objects, this underground gravitational flooding does not play a role, because it is considered to be equally proportionate falls out of the local gravitational interactions. The 'mountains' can also be completely under 'water' and still perceive and interact with one another gravitationally undisturbed.

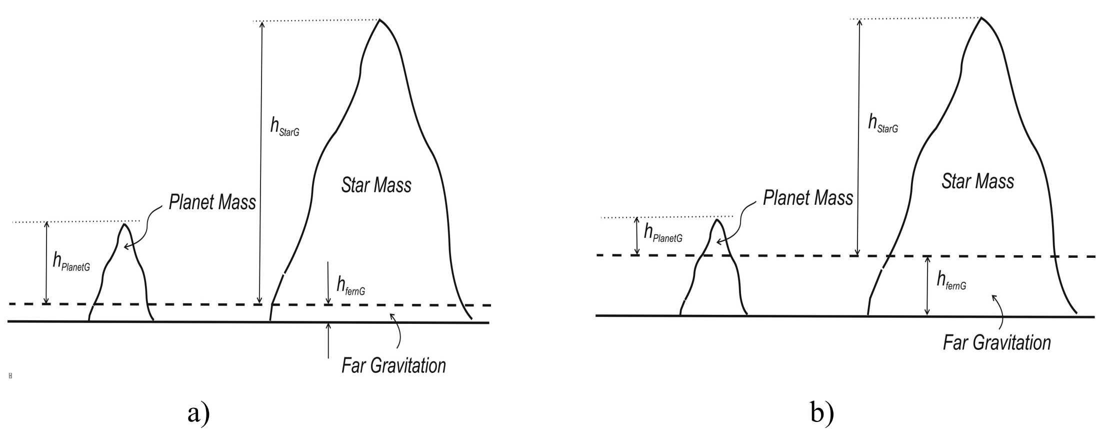

Fig. 6 . A mountain flood model of background gravity. a) Lower background gravity in the past, b) high background gravity today.

But when ancient photons arrive, which were emitted long cosmic time stretches under conditions of a lower G-field depth h_{FarG}, then precisely this plays the main role, which is decisive for determining a redshift, through the relativistic comparison. The height above the gravitational flood h_{StarG} with central mass gravitation was decisive for the generation of the spectral radiation from the atoms of the space-time-distant, ancient light sources. And these old photons generated in this way are used for comparison in earthly laboratories under the gravitational conditions of today. So our current G-field is stronger in comparison to the ancient G-field in total with the background gravity. It is noticeable that the ratio of background gravity to local central mass gravity is different for the relic and modern times and it was increased.

We know that time dilation and a redshift of the emitted photons occur on strong G-fields due to higher gravitation. It can be assumed that the distant old photons are shifted more relativistic, red, when entering the higher G-field.

To the turning points of the graph of the 'Expansion Bell'

According to the standard model, around 400 million years after the 'Big Bang' should have passed by the time the stars first appear . A *dark time* before the first stars ignited. And before that there should have been a very dynamic phase of inflation.

And after that we only see a linear and slight increase in the 'bell' and a somewhat accelerated course in the last 1 billion Years. The gravity must have appeared long before the star ignited.

But this course can also be interpreted qualitatively. The sharp slope at the beginning can mean that it was a relatively close acting flooding gravitation of our own World Bubble, which therefore had arrived so quickly. After that there must have been a distance to the next World Bubbles and therefore the rapid bend to the very flat flank. The isolated hypothetical universe structure according to Figure 4 from spaced-apart World Bubbles would justify it, while a completely even mass distribution must lead to the compensation of such distant forces. This is a first hypothesis to clarify the first kink in the curve and further changes in the gradient.

The second kink about 1 billion ago. Years it can be interpreted that the gravitational tide is now increasing in the power of 3. And it can be the linear volume-mass effect with linear *f (r)* , which already pulls the masses out of our bladder and accelerates them outwards.

The distant gravity reaching us is sent from the dark time there in distant spaces, before light sources were generated there as stars.

Weak distant gravitation acts linearly stronger from the distant space volume

On the other hand, one will object that the gravitation with $1/r^2$ decreases rapidly with distance, its share becomes vanishingly small and therefore this argumentation is superfluous.

But we have stated above that the masses in the increasing volume must increase with r^3. If one weighs both functions against each other it results for the sum of all gravitational fields G_i:

$$\Sigma G_i = f\,(r^3/\,r^2) = f\,(r). \qquad (2)$$

A *linear increase* in the distant gravitational background fields appears. Despite huge cosmological distances, the background gravity has to increase linearly with *r* , if there is only enough mass and space for it. This means that the long-range gravity, which is primarily arriving for the first time, has to add up linearly with *r* to our local G-fields. We are more and more flooded in it, but do not notice anything because standing on it, and we will measure more and more of the alleged 'space expansion' in the redshift of far old light.

This is because the further away, the more volume and masses and therefore linear with *r* , more primary first flooding gravitation arrives, which continues to flood us and makes us more gravitational-relativistic with regard to the past. The increasing 'redshift' in the last 1 billion years thus has its first model declaration.

This is another discovered effect that has nothing to do with the first, the redshift.

And it is precisely the almost linear behaviour that this “expansion bell” shows after the “inflation phase”. And the slight increase from around 1 billion. Years ahead of us can also be explained by a volume effect. In addition to pure volume, there is certainly an effect of time-extended mass production. Not all mass particles were created at the same time. In the volume that had already sent us something gravitationally and then always sends, further newly generated masses gradually emerged and sent us their new, additional *graviton fields* . And apparently these masses no longer disappear - otherwise it would also be able to decrease. Or more masses are born than disappear.

This is actually the first model that can even comment on the various gradients of the cosmological 'bell curve'. The hypothesis of a 'dark energy as a cause of space expansion' has so far not been able to tell us anything about it. The *dark energy* is also considered to always maintain the same pressure, so it grows in quantity with the increasing volume - which is also strange. Then why should it cause these curve breakpoints?

It should be noted that it says nothing about *dark matter* - this is a completely different phenomenon that happened to be given a similar name.

Space Expansion Model and Dark Energy

In the cosmological standard model, the proportion of DE only occurs after approx. 10 billion. Years ago it became dominant over normal matter and since then an accelerated expansion has taken place, while before in a 'matter era' there was a slowdown in the expansion of space.

Such fluctuations in the effect can also be described by gravitational volume effects and also subsequent secondary generation of matter together with new gravitational sources.

Hubble Constant problem

The value of the Hubble constant is now about 10% too high, measured at 73.5, than theoretically calculated. The space expansion is faster than expected. Astrophysicists and Nobel Prize winners for determining the accelerated expansion of space, such as A. Riess and B. Leibundgut at the University of Basel and others, expect a 'different, better idea' [4]. They find that the model is too far off and is therefore 'on the verge of collapse'. Even they told, that this elegant solution of explaining red shifts is to be exclude at all.

This effect is easy to see in the present gravitational flooding model, since more and more new G-fields have to arrive for the first time from the distant volume and they grow linearly proportionally with *f (r)* , with the distance *r being* proportional to time for light . In the future it will only grow and just when we observe a vertical bell curve the universe in our 'World Bubble' would be gravitationally flooded to the end.

Another gravitational-relativistic cause of mass increases through the unification of the masses

In a part of space already populated by galaxies and dust clouds, according to valid cosmological models, the dust is concentrated in star masses, which then ignite. And neighboring double stars and galaxies unite. In this case, their summed mass will not be equal to the mere sum of previous masses - a gravitational-relativistic effect must increase this sum-mass with a *gravitational-relativistic gamma factor.* As a result, it also sends out a relativistically overgrown gravitation more later than it was before in divided masses, which in the form of the more relativistic gravitons rush into space with lightning speed in all directions and also arrive in our time period after a corresponding transit time and act on our masses. It was recently used in the registration of 'gravitational waves'.

The Standard Model of Space Expansion and the Big Bang

The big bang model is compatible with the new Primary Gravitational Flooding Model, the GF model. It is a multiple and widely distributed process - that's exactly what cosmologists say about the Big Bang today. In the GF model, this space is only much larger and before that it still exists without gravitational sources, the particles. But space is considered infinite by cosmologists, so that's not a problem either. Only the space expansion is in question, but can also still be as a reduced effect next to new GFM.

A new gravitational-relativistic effect discovered

This relativistic effect is a novelty and extends the known relativistic effects. We call it a PGF redshift: a new temporal gravitational-relativistic effect of a *Pimary Gravitational Flooding* from hyper-distant universe space.

It leads us to a new model of cosmology apart from the Standard Model of cosmology. Old photons are red-shifted gravitationally-relativistically - not by a space expansion. There are *no light spatial expansion and no dark energy* needs. The Big Bang must be interpreted a little differently - it took place in an infinitely large universe at an infinite number of places 'gradually at the same time'. And that is already the case in the current cosmological model.

The ancient gravity represents the oldest signals, older than the light from the stars that we can receive. Therefore particularly valuable for astronomers and cosmology.

A Linear Volume-Gravitational Effect with distance f (r)

We also have to explain a normally rapid movement of the cosmic mass objects apart - now it can be explained classically with the linearly increasing 'V*olume Gravity'*. A slight inhomogeneity can be increasingly justified, pulling outwards over time. A newly discovered phenomenon of a gravitational-relativistic, relict *volume-gravitational effect* - which also has a classic effect. And it has an accelerating effect like any force.

The Hubble Constant of the space expansion has to be reinterpreted as proportional to the discovered relict PGF redshift.

An unexpected cosmological-astronomical model revolution is imminent, which alternates an epoch of world view.

Hubble was right when he said that "his interpretation need not remain the only possible one".

Conclusion: two new phenomena have been discovered.

A) a classically gravitational force, additionally acting at a distance, which pulls all galaxies linearly f(r) outwards; and

B) a gravitational-relativistic cause of the excessive red shifts of the distant star spectra due to long time and space range Gravitational Flooding.

Shapiro effect

According to well established Shapiro effect the light speed is getting slower in stronger gravitational fields becoming hold in Black Holes. So if this is true, then our today's speed of light is lowered by the stronger growing back ground gravitational field in compare with relict past. Consequently we must measure the same distances in space today with the lower speed of light as stretched longer, even if in space would be no expansion. Then astronomy does have to take in account this effect too when calculating cosmic distances.

The old light photons did travel faster and so the wave lengths of old photons were longer stretched in space. They did keep this original space wave lengths because the background field is very smooth homogeneous in space and do not change by acceleration. At the other hand if a photon runs in an inhomogeneous field of a central mass it will be blue shifted by gravitations acceleration force.

So in the red shift sum they must be a component of that blue shifting form an even deeper before red shifted signal. That is how this two contra acting effects can be explained too.

Inertia and acceleration

We can now see the inertia on mass particles as an action of compensating gravitational fields which equally do pull in opposite directions which results in a moving with the inertial frame of this compensating fields. They must do same on photons and in a next hypothesis the stronger fields pull it stretching longer and redder. So it was stretching the old photons redder long time by growing homogeneous flooding fields.

In an inhomogeneous field it must work increasing energy and blue shifting but the effect is viewer in compare to the billions of years of stretching old photons.

Gravitational centre of the whole universe in each location

Indeed it must be true and our planets location with the sone and in galaxy is likely to be in a centre of a central mass where gravitational fields where all gravitational fields from all directions are compensating each other. Here it happens in same manner only during a large time scale and also all primary gravitation flood fields are coming here later then in other locations, where they must have pass on the way to us.

This must be so if the whole universe is infinitesimal and the primary gravitational flooding never ends up. If it would end from one side earlier this would cause asymmetry and looking for that can became a task in astronomy.

So we can solve a paradox of Special and General Relativity too: why the earth or respective our galaxy seems to be the slowest and therefore according to Special Relativity less relativistic place in whole universe as everything is moving in relation to us?

After we will take in account that gravitational flooding effect other locations in the universe will look relativistically very similar with our and can have faster time flow speed.

And each photon is as a particle always in this gravitational centre of the world too.

Consequences

The relativistic and gravitational effects discovered are very likely to be classified as true and must therefore also be explained and quantized in the existing cosmology model and any other.

The limits of space must be assumed much further, as well as its total mass.

In large periods of time, more and more stars will shine in the distance, whose light was ignited much later by gravity and is still travelling at the speed of light. They will appear World Bubbles as a point.

And the world has a surprisingly new cosmology model as an alternative to Space Expansion with Dark Energy when no one could even think of an alternative. At the moment it is a qualitatively clearly designed model and a quantitative theory still has to manage to describe gravitation using gravitons and consistently map the problem of redshift. The spatial structure according to GRT can also be checked to determine whether it cannot be modified in order to describe it.

We can refuse the none physical compromise about the over speed of light of an expanding space, coming back to the physics ground. Dark Energy is then not necessary too.

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