Einstein's Energy Is Connected To A New Dark Energy In A Rotational Double Torus Universe While Accelerated Space-expansion in Big Bang Cosmology Is An Optical Illusion.

Author: Dan Visser, Almere, the Netherlands.

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Abstract.

Einstein's energy is connected to a new dark energy force, refined-time, the fundamental constants of Planck and Newton and prove the universe is a rotational Double Torus Universe. Also is proven that an accelerated space-expansion in a stand-alone Big Bang cosmology is an optical illusion. This paper presents a new energy-equation connecting Einstein's relativistic-energy to a new dark matter-force in a new dark energy force. This new equation is the result of combining a rather new energy-formula of E. Verlinde (UvA-NL) with my new dark energy force-formula of my Double Torus hypothesis. The Double Torus hypothesis is a new model for the universe and against Big Bang-cosmology. A second new equation proves indeed the accelerated space-time expansion is an optical illusion. The new dark energy force uses refined time, which is smaller than the Planck-time. Such causes a cyclic refined time-process from a sub-quantum scale recalculating dark matter towards the quantum scale, but in a rotational Double Torus Universe. This has consequences for the philosophy of past and future.

Introduction: New Equations for energy.

I combined a rather new energy-formula of E. Verlinde [(1)] (UvA-NL), $E=\left(4\pi\right)^{-1}h\omega\left[J\right]$, with my *new dark energy force-formula of the Double Torus hypothesis.*

In my view the Verlinde-energy shows the Planck-constant is driven by an angle-velocity ω making the relativistic energy looks like a torus-spiral. But after I combined my new dark energy force-formula F_{de} from the Double Torus hypothesis-papers[2] with the Verlinde-energy E, I find a new result:

$$\frac{E}{4\pi}=\frac{F_{de}}{Gh\left(\pm m_{dm}\right)^{2}}\left[\frac{J}{rad}\right]$$

Instead of waiting to refer to the formulations I already mention what the implication of this result is theoretically.

The insight from this equation is, that the Einstein's relativistic energy $E = mc^2$ is dependent on a higher order of dark energy force F_{de}, which is a force in a Double Torus Universe. This force stands in ratio to the Planck-constant h, the Newton-constant G and dark matter $\left(\pm m_{dm}\right)^2$. This means: relativistic energy is produced in a process of refined time, because the refined time is embedded in the new dark energy force F_{de}, wherein also dark matter is embedded as $\left(\pm m_{dm}\right)^2$. The refined time is applied on dark matter. Note: E is per $2\pi + 2\pi = 4\pi$. So, mathematically seen this is a genus-2 surface-energy.

But it goes further. I found an energy I named the DAN-energy (see also the image-1 at the end of this paper). The DAN-energy is as follows :

$$E_{de} = \pm \frac{2\pi^2 \hbar}{G} \omega \left[\frac{kg}{m^3}.Js.rad^2.s \right]$$

It is related to the angle-velocity from the Verlinde-energy, however, the dimensions express a remarkable result.

It is a sphere-mass-density $\left[\frac{kg}{m^3} \right]$ that spins (+ or -), but simultaneously the sphere undergoes an a time-acceleration in a rotational torus $\left[s \right]$. Then within this process two half-spheres $\pi^2 + \pi^2 = 2\pi^2 \left[rad^2 \right]$ converge into two points (at each side of the sphere-mass-density). This causes a transformation into a *twin-light-cone* (see again the image-1 at the end of this paper). These points enable to observe the past and the future. This is different than the open-light-cone in standard physics.

My DAN-energy describes a cyclic time-process in a Double Torus Universe. This predicts that the accelerated space-time-expansion we observe after the Big Bang is an optical illusion. My DAN's equations are based on a new dark energy force that uses time smaller than the Planck-time. With that I prove the past and future are possible to process from levels deeper than the quantum-world. Thus from a sub-quantum-level and towards the quantum-world by the recalculation of dark matter through the refined time. In this way past and future must be possible to look at. Such a cyclic-time world is considered in history as solution of the Einstein Field Equations (investigated by Lanczos (1927), van Stockum (1934), Gödel (1949), Ellis and Hawking (1973). But now I have several arguments extra of which follows that the Big Bang can no longer be maintained as the Model of the Universe.

So what my DAN-energy tells cosmology and physics is: It is not an educational solution of the Einstein Field Equations (which is not likely to be real). It is more likely it is a real solution of curved space-time, which allows space-time to be a Double Torus Universe. It is 'Double', because an inner dark matter torus rotates and is enclosed by a dark energy time-torus that fills in the refined time smaller than the Planck-time towards the dark matter. With that the Universe is recalculated from a sub-quantum-scale towards the quantum-scale. From there on reality gets its shape in a classical way. From now on the Big Bang can no longer be maintained as the model

of the Universe and mention several arguments in the end of this paper that plead against the Big Bang.

Short History.

In 2004 I formulated my new dark energy force-formula after a solitaire period of puzzling. Several papers therefore can be back-viewed in the vixra-archive going back to 2009. It took a long time before I succeeded to apply my formula in a more extended type of formulations. Then I found the Verlinde-energy for which he received the Spinoza-prize in the Netherlands. I am an independent cosmologist not affiliated to any institution. I used common sense for physics and cosmology applying simple math. In former papers and this paper I show my formulations leading to the connection of Einstein relativistic energy and dark matter as a part of a refined time-process.

I hope physicists and cosmologists, as well as the press will pay attention to this paer. I regularly noticed that the current cosmology-clan is hooked to the Big Bang. A lot of people earn a nice piece of bread by that. However, I care for the search of the right perception of the universe. All my papers point at a Double Torus Universe.

Formulations of equations towards my DAN-energy.

My new dark energy force is as follows:

$$F_{de} = \pm \frac{c^5 O_e}{2G} m^3 \left[(kgm)^3 \frac{N}{s} \right] \tag{1}$$

For the specific exercises following this can be rewritten as follows:

$$F_{de} = \pm \frac{c^5 O_e}{2G} m^3 = \frac{1}{2} m^3 c^2 \frac{\left(L_{planck} \right)^2 c^3}{G} \tag{2}$$

According a long-existent equation of:

$$O_e = \left(L_{planck} \right)^2 = \frac{\hbar G}{c^3} \tag{3}$$

Follows:

$$\hbar = \frac{\left(L_{planck} \right)^2 c^3}{G} \tag{4}$$

This changes the dark energy force as follows:

$$F_{de} = \pm \frac{c^5 O_e}{2G} m^3 = \pm \frac{1}{2} m^3 c^2 \hbar \tag{5}$$

With

$$\hbar = \frac{h}{2\pi} \tag{6}$$

changes the dark energy force again as follows:

$$F_{de} = \pm\frac{c^5 O_e}{2G} m^3 = \pm\frac{1}{4\pi} m^3 c^2 h \tag{7}$$

So the expression (7) can be written as:

$$F_{de} = \pm(4\pi)^{-1} h m^3 c^2 [\dim 1] \tag{8}$$

For which the dimensions will be found as follows:

$$F_{de} = (4\pi)^{-1} h\left[rad^{-1} Js\right].\pm m^3 c^2 [Dim2] \tag{9}$$

$$\pm m^3 c^2 [Dim2] = \left[kg^3 m^2 s^{-2}\right] = \left[kg^2 kgm^2 s^{-2}\right] = \left[kg^2 J\right] = \left[kg^2 spin.s^{-1}\right] \tag{10}$$

A part of this dimension can be further expressed as follows:

$$\left[kg^2 s^{-1} = \left(Gm^3 s^{-2}\right)^2 s^{-1}\right] = \left[G^2 m^6 s^{-4} s^{-1}\right] = \left[G^2 m^4 s^{-4} m^2 s^{-1}\right] = \left[G^2 G^{-1} Nm^2 s^{-1}\right] \tag{11}$$

Of which follows:

$$\left[G^2 G^{-1} Nm^2 s^{-1}\right] = \left[G^2 G^{-1} Nmms^{-1}\right] = \left[GJms^{-1}\right] \tag{12}$$

These dimensional exercises determine the dimension of $\pm m^3 c^2$ as follows:

$$\pm m^3 c^2 \left[kg^2 spin.s^{-1}\right] = \left[GJms^{-1} spin\right] \text{ , named (A)} \tag{13}$$

$$\pm m^3 c^2 = \left[GJms^{-1} spin\right] = \left[GJ^2 m\right] \text{ , named (B)} \tag{14}$$

Now the dimension of the dark energy force can be expressed according to (A):

$$F_{de} = \pm(4\pi)^{-1} h\left[rad^{-1} Js\right].m^3 c^2 \left[GJms^{-1} spin\right] \tag{15}$$

From this follows the dimension $\dim 1$:

$$F_{de} = \pm(4\pi)^{-1} hGm^3c^2\left[rad^{-1}J^2m.spin\right] \tag{16}$$

which is the same as:

$$F_{de} = \pm(4\pi)^{-1} hGm^3c^2\left[J^2m\frac{spin}{rad}\right] \tag{17}$$

This dimension is the image of a spinning surface-energy-sphere per radial. So it is part of a rotation, which then creates a torus ! That implies a transformation of the surface-energy-sphere into a twin-light-cone with past- and future-points rotating all along around inside the torus. This is because a sphere doesn't hold its spherical form while moving. However, rotating light-cones in a cyclic period are one of the strange solutions of Einstein's Field Equations mentioned by Lanczos in 1927, van Stockum in 1934 and Gödel in 1949. But Ellis and Hawking analyzed that in 1973. They mathematically pointed-out that the light-cones became twin-light-cones with a past- and future point instead of an open past and future. These past- and future light-cone-points enable to observe one past and future. Such a universe will not have time-evolution, but instead CTC's (Closed Time Curves). However, nobody at that time saw a rotational universe in 1973. Then the discovery of an accelerated space-expansion in 1998 degraded such a rotational universe to an educated-exercise of the Einstein's Field Equations. However, nowadays there is reason enough doubting the Big Bang strongly. This is because we observed a CMB-dipole, an α-dipole, a dark flow, a dark energy not fitting the Big Bang framework, a negative curvature of space and a scale-possibility below the Planck-scale by observing GRB's . I will explain the arguments at the end of this paper.

Comparison with the Verlinde-energy.

The Verlinde-energy is as follows:

$$E = \left(4\pi\right)^{-1} h\omega\left[J\right] \tag{18}$$

The ratio of the Verlinde-energy and the new dark energy force will be as follows according to (B):

$$\frac{E}{F_{de}} = \frac{\left(4\pi\right)^{-1} h\omega}{\pm\left(4\pi\right)^{-1} hm^3c^2} = \frac{\omega}{\pm m^3c^2}\left[\frac{rad.s^{-1}}{GJ^2m}\right] \tag{19}$$

Which is the same as:

$$\frac{E}{F_{de}} = \frac{\left(4\pi\right)^{-1} h\omega}{\pm\left(4\pi\right)^{-1} hm^3c^2} = \frac{\omega}{\pm Gm^3c^2}\left[\frac{rad.s^{-1}}{J^2m}\right] \tag{20}$$

This ratio is the ratio of the Verlinde-energy E and the DAN dark energy force formula F_{de} in the Double Torus hypothesis. The ratio expresses the angle-velocity per rotational surface-energy-sphere. That means we deal with a rotational torus-surface !

Now this ratio can be rewritten according to (17) as follows:

$$E_{de} = F_{de} \frac{\omega}{\pm G m^3 c^2} \left[\frac{J^2 mspin}{rad} . \frac{rad.s^{-1}}{J^2 m} \right] \tag{21}$$

From this follows:

$$E_{de} = F_{de} \frac{\omega}{\pm G m^3 c^2} \left[\frac{spin}{s} = J \right] \tag{22}$$

$$E_{de} = \pm F_{de} \frac{\omega}{G m^3 c^2} \left[J \right]$$

This energy is based on the refined time smaller than the Planck-time, because it is expressed in the new dark energy force F_{de}. It affects the dark matter and could have as a consequence a twin-light-cone moving in a cyclic way inside the Double Torus. I have to prove that, because it is explicitly expressed in the F_{de} equations by separate parts for the Newton-quantum-gravity-force and the dark matter-force. This will be proved by exercises further in this paper.

But the substitution of the dark energy force shows a check that the Verlinde-energy follows anyhow:

$$E_{de} = \pm (4\pi)^{-1} h G m^3 c^2 \frac{\omega}{G m^3 c^2} = \pm (4\pi)^{-1} h \omega \left[J \right] \tag{23}$$

Connection of the Einstein-energy with dark matter, the Planck-constant, the Newton-constant and refined time in the new dark energy force; all part of the framework of the Double Torus hypothesis.

From this point on I can show how the Einstein's relativistic energy $E = mc^2$ connects to dark matter and more.

Starting with equation (22):

$$E_{de} = \pm \frac{F_{de}}{G m^3 c^2} \omega \left[J \right] \tag{24}$$

The Verlinde-energy $E = (4\pi)^{-1} h \omega \left[J \right]$ will be get, if:

$$\frac{F_{de}}{Gm^3c^2} = \frac{h}{4\pi} \tag{25}$$

As described in former of my papers[3] and legitimized by astronomical observations a split-up of visible mass and dark matter mass is executed, as follows:

$$\frac{F_{de}}{G\left(mc^2\right)\left(\pm m_{dm}\right)^2} = \frac{h}{4\pi} \tag{26}$$

This the same as:

$$\frac{F_{de}}{GE\left(\pm m_{dm}\right)^2} = \frac{h}{4\pi} \tag{27}$$

This is the same as:

$$E = \frac{4\pi F_{de}}{Gh\left(\pm m_{dm}\right)^2} \tag{28}$$

This leads to:

$$\frac{E}{4\pi} = \frac{F_{de}}{Gh\left(\pm m_{dm}\right)^2}\left[\frac{J}{rad}\right]$$

This equation proves the Einstein's relativistic energy is dependent on a higher order dark energy-force in ratio to the Planck-constant, the Newton-constant and dark matter. This means: relativistic energy is produced in a process of refined time, which is enclosed by the new dark energy force, and which is applied on dark matter. Please note: E is per 4π . So, mathematically seen, this is a genus-2 surface-energy.

(29)

Now I also check, if the Einstein-connection with the dark matter-force in F_{de} is correct. In a certain way this should deliver a well-known parameter of standard physics by substitution of the details of my dark energy force equation F_{de} .

The check of the Einstein-connection with the dark matter-force by substitution of my dark energy force equation in detail.

My dark energy force formula is in detail as follows:

$F_{de} = qF^{g}{}_{N} \otimes \pm sqF_{dm}$, for Newton-quantum-gravity-force and sub-quantum-dark matter force. Here the partial-equation $\pm sqF_{dm}$ is the new dark matter-force that connects Einstein's relativistic energy to a sub-quantum domain of refined time.

Which is equivalent to:

$$F_{de} = m.\left(k_{de}\right)^{\frac{1}{2}} \otimes \pm\left(m_{dm}\right)^{2}.\left(k_{de}\right)^{\frac{1}{2}} \quad \text{, see my paper}^{(4)} \tag{30}$$

Substitution in equation (29:

$$\frac{E}{4\pi} = \frac{m.\left(k_{de}\right)^{\frac{1}{2}} \otimes \pm\left(m_{dm}\right)^{2}.\left(k_{de}\right)^{\frac{1}{2}}}{Gh\left(\pm m_{dm}\right)^{2}} \tag{31}$$

Gives the following result:

$$\frac{E}{4\pi} = \frac{m.k_{de}}{Gh} \tag{32}$$

For $k_{de} = \frac{c^{5}O_{e}}{2}$ at quantum gravity (see also my paper[4]) (33)

Follows:

$$\frac{E}{4\pi} = \frac{m.\frac{c^{5}O_{e}}{2}}{Gh} \tag{34}$$

For $E = mc^{2}$ (35)

Follows:

$$\frac{mc^{2}}{4\pi} = \frac{m.\frac{c^{5}O_{e}}{2}}{Gh} \tag{36}$$

This is the same as:

$O_{e} = \left(L_{planck}\right)^{2} = \frac{Gh}{2\pi c^{3}} = \frac{G\hbar}{c^{3}}$, which is OKAY ! This proves my dark energy force-formula must be right!

Now the evidence for the *twin-light-cone* with past-and future points can be derived, which enables to observe the past and future in a cyclic rotational Double Torus Universe.

I show the evidence from the equations.

I start with the amount of new dark energy that followed from the mathematical-equation described by Chris Forbes with whom I lost contact beginning 2011 and with whom I described the Double Torus in the first three papers of 2009. I had to go on my own he said!

$$Y_{de} = -\frac{1}{4}c^4\hbar^2 m^6 G \tag{37}$$

This can be rewritten as:

$$Y_{de} = -\left(\frac{h}{4\pi}\right)^2 \left(m^3c^2\right)^2 G \tag{38}$$

And because I have found in equation (17):

$$F_{de} = \pm\left(\frac{h}{4\pi}\right)\left(m^3c^2\right)G \;\Rightarrow\; \left(F_{de}\right)^2 = \pm\left(\frac{h}{4\pi}\right)^2\left(m^3c^2\right)^2 G^2 \tag{39}$$

And then follows from equation (38) and (39):

$$Y_{de} = -\frac{\left(F_{de}\right)^2}{G} \tag{40}$$

Which is the same as:

$$\frac{Y_{de}}{F_{de}} = -\frac{F_{de}}{G} \tag{41}$$

From my equations in a former paper[5] follow:

$$\frac{Y_{de}}{F_{de}} = \pm\frac{m^3h^2}{2cO_e} \tag{42}$$

From this follows:

$$\pm\frac{m^3h^2}{2cO_e} = -\frac{F_{de}}{G} \tag{43}$$

According to the earlier found equation (24):

$$E_{de} = \frac{F_{de}}{G} . \frac{\omega}{\pm m^3 c^2} \tag{44}$$

Which is the same as:

$$\frac{F_{de}}{G} = \frac{E_{de}}{\left(\frac{\omega}{\pm m^3 c^2} \right)} \tag{45}$$

follows:

$$\pm \frac{m^3 h^2}{2cO_e} = \pm \frac{E_{de}}{\left(\frac{\omega}{m^3 c^2} \right)} \tag{46}$$

Which is the same as:

$$\pm \frac{\left(\frac{h^2 \omega}{c^2} \right)}{2cO_e} = E_{de} \tag{47}$$

Which is the same (after substitution of O_e) as:

$$E_{de} = \pm \frac{h^2 \omega}{2O_e c^3} = \pm \frac{h^2 \omega}{2\left(\frac{hG}{2\pi c^3} \right) c^3} \tag{48}$$

From this follows:

$$E_{de} = \pm \frac{\pi h}{G} \omega \left[\dim 3 \right], \text{with } h = 2\pi\hbar \tag{49}$$

it is the same as:

$$E_{de} = \pm \frac{2\pi^2 \hbar}{G} \omega \left[\dim 3 \right] \tag{50}$$

Now I find the dimension $\left[\dim 3 \right]$ as follows:

$$\left[dim3 \right] = \left[\frac{rad^2 . Js}{N . \frac{m^2}{kg^2}} . \frac{rad}{s} \right] = \left[\frac{J . rad^2 rad}{kg \frac{m}{s^2} . \frac{m^2}{kg^2}} \right] = \left[\frac{J . rad^2 rad}{\frac{m^3}{kg . s^2}} \right] = \left[\frac{kg}{m^3} . Js . rad^2 . s . rad \right] \tag{51}$$

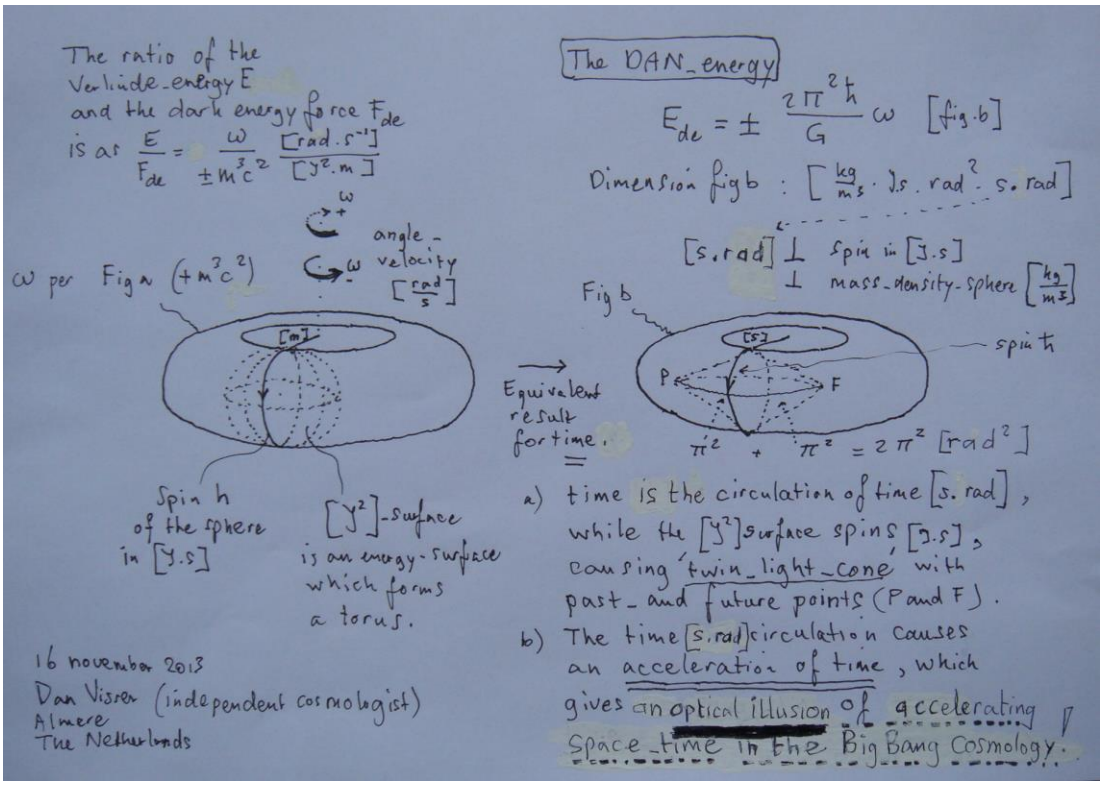
The DAN-energy.

$$E_{de} = \pm \frac{2\pi^2 \hbar}{G} \omega \left[\frac{kg}{m^3}.Js.rad^2.s.rad \right] \quad (52)$$

I call this the DAN-energy (after my name Dan Visser, Almere, the Netherlands). It is related to the angle-velocity ω in the Verlinde-energy. However, the dimensions express a remarkable result. It is a sphere-mass-density $\left[\frac{kg}{m^3} \right]$ that spins $\left[Js \right]$ (+ or -). But at the same this sphere moves forward rotational in time $\left[s.rad \right]$. This causes two half-spheres $\pi^2 + \pi^2 = 2\pi^2 \left[rad^2 \right]$ which converge into two points at each side. This is the transformation into a *twin-light-cone* (see image-1)moving forward rotational in time. The points at each side are the past and the future. This is different than the open-light-cone in standard physics. But it is already predicted by Lanczos (1927), van Stockum (1934) and Gödel (1949) and analyzed by Ellis and Hawking (1973). So what my DAN-energy tells cosmology and physics is: It is not an educational solution of the Einstein Field Equations, but a real solution of curved space-time. It is a Double Torus Universe, of which the inner dark matter torus rotates and of which the enclosing dark energy time-torus fills in the time smaller than the Planck-time towards dark matter. With that the Universe is recalculated from a sub-quantum-scale towards the quantum-scale. From there on, reality gets its shape in a classical way. From now on the Big Bang can no longer be maintained as the model of the Universe. There are several arguments that indeed plead against the Big Bang. I describe them at the end of this paper.

But above all, I also have proved that an acceleration of time follows from this equation. This suggests space-time-expansion. Thus space-time-expansion in the Big Bang-cosmology is an optical illusion !!

Image-1: The DAN-energy.



Explanation image-1: The DAN-energy describes a cyclic time-process in a Double Torus Universe. This predicts the accelerated space-time-expansion we observe after the Big Bang should have started, is an optical illusion. My DAN-equations are based on a new dark energy force that uses time smaller than the Planck-time. With that I prove the past and future are possible to process from levels deeper than the quantum-world. This means from a sub-quantum-world towards the quantum-world a recalculation of dark matter takes place through refined time. In this way past and future must be possible to look at. Such a cyclic-time-curved world (ctc) is a serious solution of the Einstein Field Equations (investigated by Lanczos (1927), van Stockum (1934), Gödel (1949), Ellis and Hawking (1973). But such a 'ctc' was an interpretation within the Big Bang-cosmology and not within the Double Torus Universe. Now I proved a 'ctc' belongs in the Double Torus Universe. Moreover, several arguments nowadays indicate that the Big Bang can no longer be maintained as the Model of the Universe. I give the arguments here.

Eight arguments for the non-existent Big Bang.

1. The Planck-satellite couldn't eliminate the anomaly of the CMB-dipole from former less accurate observations with WMAP . The CMB is the Cosmic Microwave Background, which is supposed to have taken care for the superfast expansion of the universe after the Big Bang. The dipole means that a lot less low frequencies than high frequencies are part of the variations in temperature in the CMB. This clearly indicates an observable warmer and colder expansion in the most far distant space of the universe. Apparently a flow of space is approaching and flowing away. This is an indication of a rotational universe. The Big Bang is an optical illusion. The Big Bang is no stand-alone model. The Big Bang has to be part of a different dynamics of time in the rotational Double Torus Universe.
2. Additionally astronomical observations have measured an alpha-dipole at galaxy-clusters. An alpha-dipole means a smaller- and larger value for the fine-structure constant, which is a measure for the strength of the electromagnetic force (so also light) in two opposite directions in the universe. This is an additional indication that matter can flow towards and flow-away from the observer. This indicates a correlation with the CMB-dipole.
3. Moreover, a dark matter-flow is also detected astronomically. Such a 'dark flow' appears to affect galaxy-clusters. It can be a confirmation of a flow-away of matter, because dark matter flows around in the Double Torus-shaped universe. It goes hand-in-hand with the CMB-dipole en de alpha-dipole.
4. Besides, General Relativity predicts gravity-waves. These are not (yet) determined in earth-laboratories. Still gravity-waves are observed by at least 350 concentric circles with each circle presenting equal temperatures. This so called Conformal Cyclic Cosmology[6] denies the existence of cosmic inflation. It posits collisions of black holes in a former universe. This should have initiated the gravity-waves as concentric circles. The time-evolution from that former universe is being continued. The investigators claim to have a 5-sigma certainty, which is equivalent to a discovery. This indicates in general that the universe did not start with a stand-alone Big Bang super-mass-density. Moreover, it has been calculated mathematically that a chance on cosmic inflation is 1 on 10^{80}. This would be too small to be true in addition to the other arguments.
5. The sphere-shape of the universe in advance of comic inflation is intensively investigated. But according to mathematically prediction such a universe would look a

'foot-ball', which is given shape by 'slices of space' with five borders. Twelve of these slices are supposed to be there. These should mirror all possible light-images in the CMB. This leads to the expectation of a pattern of a specific distribution of temperatures, which is repeating itself. However, such a pattern has never been found. This pleads again the Big Bang cosmology.

6. Since recently observations have determined that the amount of dark energy in the current dark-energy-theory is not correct. The current dark energy is supposed to be responsible for the accelerated space-expansion since 1998. But now it is an indication that the Einstein cosmological constant again has to be drawn back . My DAN-energy formula clearly shows the accelerated space-expansion is an optical illusion.
7. Even there is an astronomical observation of negative curvature. This points to the observation of distant space to be curved as the inside border of the torus-shape.
8. Last but not least: The Integral-satellite has gathered evidence for smaller lengths than the Planck-scale. These measurements are related to the observation of Gamma-Ray-Bursts (GRB's); a GRB is the escape of strong radiation caused by an enormous collision of black holes.

Reference.

[1] Entropie-Zwaartekracht JHEP04 (2011) 029 by E. Verlinde (UVA-NL).

[2] www.vixra.org/author/dan.visser : Overview of the papers of Dan Visser, Almere, the Netherlands.

[3] http://vixra.org/abs/1010.0014: Verson-2: Author Dan Visser, titled: "Deeper Properties derived from the 1-st derivative of the Dark Energy Formula Force".

[4] http://viXra.org/abs/1308.0034 : Author Dan Visser, titled: Riemann Hypothesis Solved Through Physics-Math In New Cosmological Model: The Double Torus Hypothesis.

[5] http://vixra.org/pdf/1103.0012 : Version-2: Double Torus Cosmology Reveals Cosmic Microwave Background To Measure Dark Energy.

[6] Arxiv 1011.3706 (November 16 2010): Concentric circles in WMAP data may provide evidence of violent pre-Big-Bang activity by V. G. Gurzadyan of the Yerevan Physics Institute and Yerevan State University, Yerevan, 0036, Armenia en R. Penrose of the Mathematical Institute, 24-29 St Giles', Oxford OX1 3LB, U.K.