

# Evidence for a closed-curved and cyclic Double Torus Universe.

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## Abstract.

The evidence comes from an alternative calculation of deviations in the dipole fine-structure constant ( $\alpha$ ). The alternative calculation reveals  $\alpha$  deviations spatially and timely connected to a curved dark flow that fits a closed-curved and cyclic Double Torus Universe. This opens-up a new perception the Big Bang is spinning inside another cosmological model. In reality this means the deviation in the dipole  $\alpha$  represents the recalculation of the electromagnetic force. Hence, in terms of a cosmological completeness, with also the other forces involved, one could say reality is recalculated by new features of the Double Torus Universe. The features are described earlier in papers posted in the Vixra-archive. Specifically this paper gives the derivations and calculations to show the evidence  $\alpha$  deviations are spatially and timely connected in the Double Torus Universe.

## Introduction.

In this paper I present a new formula to calculate the deviation of the dipole fine structure constant alpha ( $\alpha$ ) timely. The  $\alpha$  represents the electromagnetic force to be constant. However, astronomical data from 2011 proved  $\alpha$  to be spatially deviating in opposite directions of the hemisphere in the universe. The deviation showed  $\alpha$  to be larger, as well as smaller. Laboratory-experiments also confirmed  $\alpha$  to be deviating in time. Here my paper extends the focus. It presents a spectacular conclusion: A new formula for the calculation of the deviating  $\alpha$ -values from the perspective of the dark energy and dark matter hypothesis of the Double Torus Universe. Meanwhile this hypothesis became a model describing a new dark energy force formula, a new dark energy force formula and a new perception of time. The new time perception involves a lower level than the Planck scale. Using these formulas, produce a time-deviation for  $\alpha$  with differences in light-year-distances to astronomical objects. These values are being compared with the calculated spatial-deviations of  $\alpha$ , performed by the Keck- and VLT telescopes (report<sup>[1]</sup>). The alternative results in this paper, however, show deviating values for  $\alpha$  to be smaller for the more distant astronomical objects in both opposite hemisphere-directions. Seemingly the alternative calculations suggest the astronomical objects are timely closer by to the observer than spatially is measured. Hence, an asymmetric curved geometry could be the cause in both opposite directions. That would mean for the first time in history that evidence for a closed-curved and cyclic Double Torus is revealed by measurements and alternative calculations based on a new cosmological model.

## The fine-structure constant.

The fine structure constant  $\alpha$  represented the electromagnetic force (EMF) to be constant all over the universe understood as emerged from a Big Bang. It would be a 4D hyperspace with 3 D space and 1D time, wherein normally  $\alpha = 1/137$ . However, astronomical red-shift-measurements on

quasars (128) in 1999 revealed the fine structure-constant is variable spatially. The  $\alpha$  appeared to be larger and not constant. This was confirmed with astronomical measurements in 2004, while also laboratory-measurements revealed an  $\alpha$  to be larger at a higher energy (80 GeV) at a value of  $1/128$ . Then in November 2011 a report was published<sup>[1]</sup> indicating  $\alpha$  also appeared to be smaller, when measuring it in the opposite direction of the hemisphere. The fine structure constant  $\alpha$  is described according to that report as:

$$\frac{\Delta\alpha}{\alpha} = Ar \cos \theta [GLyrs] \quad (\text{see report-reference}^{[1]})$$

This means: Related to the distance of the measured astronomical objects the deviation  $\Delta\alpha/\alpha$  will be '+' and '-', according to the  $\cos \theta$  function. This made  $\alpha$  a dipole, which I will express in this paper as:  ${}^S_N\alpha_{\pm}$ , where index S is the south-hemisphere and index N is the north hemisphere, with the index + is the larger  $\alpha$  corresponding to S and the index - is the smaller  $\alpha$  corresponding to N.

Then laboratory experiments on  $H_2$  also appeared to reveal  $\alpha$  to be dependent on time, which was calculated (estimated) on  $t^{-1/2}$ . I will show this is wrong. I come forward with a new formulation, which calculates  ${}^S_N\alpha_{\pm}$  with  $t^{2/3}$ , based on the new dark energy-dark matter concept of the Double Torus Cosmology, instead of the 4D hyper spaced Big Bang.

My paper presents  $\alpha$  being variable in time due to the tandem dark energy-dark matter in the Double Torus Cosmology. That enabled me to calculate the larger and smaller  $\alpha$  relative to the astronomical distances mentioned in report<sup>[1]</sup>. The formula I used is based on the dark energy and dark matter in the new Double Torus Cosmology. It uses the product of the constant (k) of the dark energy force formula and the use of the two extra time-directions from below the Planck scale. These are new aspects in physics and cosmology. The formula is given by:

$${}^Z_N\alpha_{\pm} = \pm (F_{de})_k \otimes t^{\frac{2}{3}} [Jm^2s^{-1}] \quad (1)$$

where  $\pm (F_{de})_k$  is the constant in the dark energy force formula and  $t^{\frac{2}{3}}$  is the time of two additional time-directions below the Planck scale.

In the next chapter I show my derivations of formula (1) and a few calculated values of  $\frac{\Delta\alpha}{\alpha}$ .

### Derivations.

Before giving the derivation of equation (1) I summarize the other equations I derived in my former papers.

Firstly, there is the equation of the new dark energy:

$$E_{de} = \pm (m_{dm})^2 \otimes t^{\frac{2}{3}} \left[ \frac{m^3 m^3}{s^3} s^{\frac{2}{3}} \right] \text{ or} \quad (2)$$

$$E_{de} = \pm (m_{dm})^2 \otimes t^{\frac{2}{3}} \left[ \frac{m^3 m^3}{s^2} \right] \left[ \frac{1}{s^3} \right] \quad (3)$$

This represents the relationship between dark energy and dark matter by means of two quantum-entangled spaces {per two time directions ( $s^2$ )}, which is also per dark matter torus-time ( $s^{1/3}$ ). I resume from my former papers that the total time 't' in the Double Torus is formed by the time  $t^{2/3}$ , which is emerging from below the Planck scale (a new principle) and time  $t^{1/3}$ , which is related to dark matter, whereof about 4% is accepted as visible matter. Visible means: detecting the EMF represented by  $\alpha$ .

Secondly the original dark energy force formula:

$$F_{de} = \pm km^3 \left[ (kgm)^3 \frac{N}{s} \right] \text{ with } k = \frac{c^5 O_e}{2G} \left[ J \frac{m^2}{s} \right] \quad (4)$$

Where k is the dark energy constant in the new dark energy force. The dimension of k is an energy-flow through a surface related to visible mass  $m_{vm}$ , while the  $m^2 = \pm (m_{dm})^2$  being dark matter in the mass-term  $m^3$ . The  $F_{de}$  is the new dark energy force per second in the Double Torus Universe hypothesis.

In follow-up papers<sup>[2]</sup> the dark energy force was transformed in an equivalent force smaller than the smallest gravity; for the record I will show this in equation (5), because that formula was used for theoretical calculations of the neutrino-faster-than-light, which are still a serious option in experiments; the CERN-experiment is in the momentum of diminishing or amplifying the time-gain for neutrinos compared to light path, dependent on discovering GPS-and atom-clock sync-problems. The exclusion will be expected May 2012 from new experiments. Also a prediction of a new Higgs energy (Higgs LBS-surface) is based on these formulas.

The force smaller than the smallest gravity is described as:

$$F_{de} = F(\downarrow \lim)_N [N] \otimes \pm (m_{dm})^2 \left[ \frac{m^3 m^3}{s^3} \right] \quad (5)$$

being a product of the smallest Newton gravity  $F(\downarrow \lim)_N [N]$  and  $\pm (m_{dm})^2$  being dark matter squared (so, different than conventional dark matter). Nevertheless, formula (3 and 4) are used for the derivation and calculation of the dipole  ${}^Z_N \alpha_-^+$ .

**Derivation of  ${}^Z_N \alpha_-^+$ .**

Starting with equation (3):

$$E_{de} = \pm (m_{dm})^2 \otimes t^{\frac{2}{3}}$$

Both sides of equation (3) will be multiplied by the smallest Newton force. This gives:

$$E_{de} \otimes F(\downarrow \lim)_N = F(\downarrow \lim)_N \otimes \pm(m_{dm})^2 \otimes t^{\frac{2}{3}} \quad (6)$$

Then according to equation (5), follows:

$$\pm E_{de} \otimes F(\downarrow \lim)_N = \pm F_{de} \otimes t^{\frac{2}{3}} \quad (7)$$

Then dividing the left- and right terms at both sides of the equal-sign by  $\pm m^3 = m \cdot \{\pm(m_{dm})^2\}$  will result left in time  $\pm t^{2/3} \otimes a(\downarrow \lim)_N$ , while the right part results in  $k \otimes t^{2/3}$  with

$$k = \frac{c^5 O_e}{2G} \left[ J \frac{m^2}{s} \right]$$

So, the left part results in a smallest velocity  $v$  [m/s] per time in  $[s^{1/3}]$ . This  $[s^{1/3}]$  is the time-definition of the inner dark matter torus in the Double Torus Universe hypothesis. This means the velocity exists in a new cosmological geometry, wherein about 4% is visible matter that is manifesting as the EMF. At the same time the right part represents an energy-flow controlled by the time definition of dark energy ( $s^{2/3}$ ) in the Double Torus Universe hypothesis. Hence, the fine structure constant is clear to be the EMF-parameter, which is performing a 'flowing energy dipole' in the Double Torus Universe, wherein time is defined as 't' =  $t^{1/3} \times t^{2/3}$ .

The flowing energy dipole  $\pm_N^Z \alpha_-^+$  will be calculated on their timely-deviation with the distance to astronomical objects and not on their spatial-deviation versus distance to astronomical objects gathered by the Keck and VLT telescopes in 2011. The formula is:

$$\pm_N^Z \alpha_-^+ = \pm k \otimes t^{\frac{2}{3}} \quad \text{the equation to calculate the}$$

$$\text{time-variable dipole fine structure constant } \pm_N^S \alpha_-^+ ;$$

$$k = \frac{c^5 O_e}{2G} \left[ J \frac{m^2}{s} \right] \quad \text{while } t^{\frac{2}{3}} \text{ are the two}$$

$$\text{additional time-directions from below the Planck}$$

$$\text{scale.}$$

(8)

Equation (8) is based on additional time-directions from below the Planck scale, the  $\alpha$  dipole flow is independent of Relativity. Note: the  $\alpha$  dipole itself (without flow) is still dependent on Relativity. The  $\alpha$  dipole flow, however, matches the dark flow discovered in the Cosmic Microwave Background (CMB). I will continue this aspect in the end of this paper.

## Calculations of ${}^Z_N\alpha_-^+$

I present the calculations of  $\Delta\alpha/\alpha$ , which is the same as the notation  ${}^Z_N\alpha_-^+$ . I start with the constant k of the dark energy force formula (see equation 4 and 8).

$$k = 123.7934611717809 \times 10^{-19}$$

$$\text{for } G = 6.6742 \times 10^{-11}; c = 2.99792458; O_e = (L_{\text{Planck}})^2 = (2.6122317376)^2$$

The calculation would be based on a substitution of the distance to the astronomical objects in light seconds. The distance in the report<sup>[1]</sup> reaches from 1 to 10 Giga Lyrs (GLyrs); 1 Lyr = 31.557.600 light seconds; 1 GLyr = 31.557.600 x 10<sup>9</sup> light seconds; 10 GLyrs = 31.557.600 x 10<sup>10</sup> light seconds.

*For 1 light year:*

$$\begin{aligned} \pm {}^Z_N\alpha_-^+ &= \pm k \otimes t^{\frac{2}{3}} = 123.7934611717809 \times 10^{-19} \times (31557600 \times 10^9)^{2/3} \\ &= 123.7934611717809 \times 10^{-19} \times (31.557600 \times 10^{15})^{2/3} \\ &= 123.7934611717809 \times 10^{-19} \times 9.986231861 \times 10^{10} \\ &= 1236.278649 \times 10^{-9} = \mathbf{0.123627 \times 10^{-5}} = \mathbf{\underline{0.124 \times 10^{-5}}} \end{aligned}$$

*For 3 light years:*

$$\begin{aligned} \pm {}^Z_N\alpha_-^+ &= \pm k \otimes t^{\frac{2}{3}} = 123.7934611717809 \times 10^{-19} \times (31557600 \times 10^9 \times 3)^{2/3} \\ &= 123.7934611717809 \times 10^{-19} \times (31.557600 \times 10^{15} \times 3)^{2/3} \\ &= 123.7934611717809 \times 10^{-19} \times 9.986231861 \times 10^{10} \times 2.88008367 \\ &= 1236.278649 \times 10^{-9} \times 2.88008367 = \mathbf{0.356058 \times 10^{-5}} = \mathbf{\underline{0.356 \times 10^{-5}}} \end{aligned}$$

*For 7 light years:*

$$\begin{aligned} \pm {}^Z_N\alpha_-^+ &= \pm k \otimes t^{\frac{2}{3}} = 123.7934611717809 \times 10^{-19} \times (31557600 \times 10^9 \times 7)^{2/3} \\ &= 123.7934611717809 \times 10^{-19} \times (31.557600 \times 10^{15} \times 7)^{2/3} \\ &= 123.7934611717809 \times 10^{-19} \times 9.986231861 \times 10^{10} \times 3.659305235 \\ &= 1236.278649 \times 10^{-9} \times 3.659305235 = \mathbf{0.452392 \times 10^{-5}} = \mathbf{\underline{0.452 \times 10^{-5}}} \end{aligned}$$

*For 10 light years:*

$$\pm {}^Z_N\alpha_-^+ = \pm k \otimes t^{\frac{2}{3}} = 123.7934611717809 \times 10^{-19} \times (31557600 \times 10^9 \times 10)^{2/3} =$$

$$\begin{aligned}
&= 123.7934611717809 \times 10^{-19} \times (31.557600 \times 10^{15} \times 10)^{2/3} = \\
&= 123.7934611717809 \times 10^{-19} \times 9.986231861 \times 10^{10} \times 4.641588121 \\
&= 1236.278649 \times 10^{-9} \times 4.641588121 = \mathbf{0.573829 \times 10^{-5}} = \mathbf{\underline{0.574 \times 10^{-5}}}
\end{aligned}$$

For 13.7 light years (distance to the CMB):

$$\begin{aligned}
\pm_N^Z \alpha_{-}^{+} &= \pm k \otimes t^{\frac{2}{3}} = 123.7934611717809 \times 10^{-19} \times (31557600 \times 10^9 \times 13.7)^{2/3} \\
&= 123.7934611717809 \times 10^{-19} \times (31.557600 \times 10^{15} \times 13.7)^{2/3} \\
&= 123.7934611717809 \times 10^{-19} \times 9.986231861 \times 10^{10} \times 5.725502856 \\
&= 1236.278649 \times 10^{-9} \times 5.725502856 = \mathbf{0.707831} = \mathbf{\underline{0.708 \times 10^{-5}}}
\end{aligned}$$

In table 1 the calculated-values  $\times 10^{-5}$ , emerging from the calculations just made, are presented versus the measured-values performed by the Keck and VLT telescopes, as mentioned in the reference report<sup>[1]</sup>. The measured-values, also  $\times 10^{-5}$ , are put between “(..)”. Both values are related to distance in GLyr.

Table 1:

0.124 versus (0.1) at 1GLyr

0.356 versus (0.4) at 3GLyr

0.452 versus (0.8) at 7GLyr

0.574 versus (1.1) at 10GLyr

*0.708 versus ( ? ) at 13.7 GLyr (the distance to the CMB; data with (?) is not mentioned in report<sup>[1]</sup>.*

As one can see, it remarkably shows how the calculated values are increasingly smaller with a longer distance, compared to the Keck-VLT values for the same distance. This leads to a rather spectacular conclusion: The spatially observed ( $\Delta\alpha/\alpha$ ), which is represents  $\pm_N^Z \alpha_{-}^{+}$ , can only be increasingly larger with the distance, if space-time curves into cylinder-like-geometry. At the same time this might justify the discovered dark flow.

This would mean we might deal with a part of a curved dark flow of matter in a Double Torus Universe ! Hence, this would mean we deal with a Big Bang that flows all along the Double Torus in a closed cyclic way.

For a better understanding I show this remarkable interpretation in image 1 (fig. a, b, c).

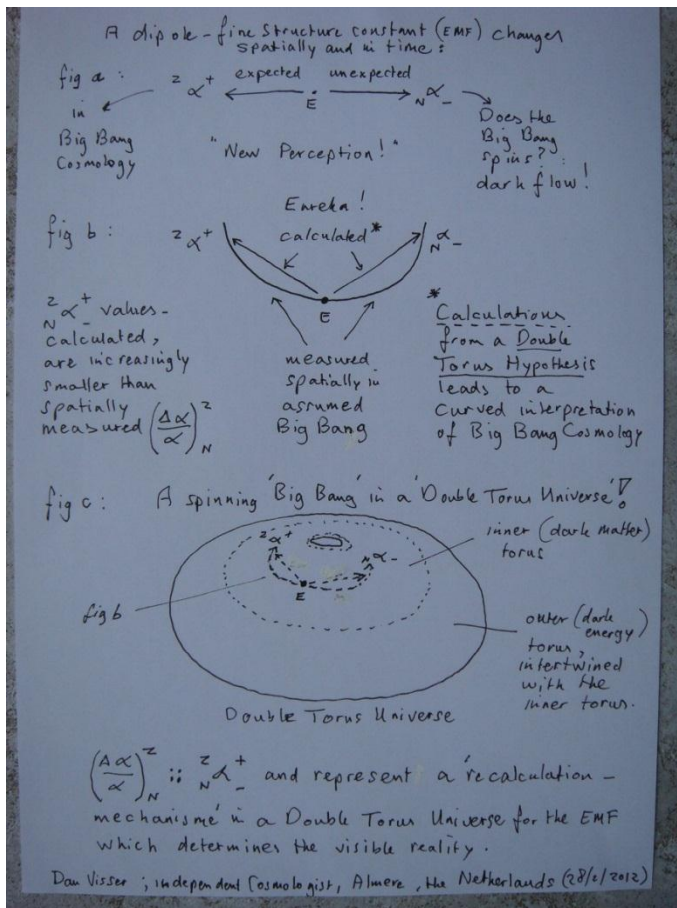


Image 1: A dipole fine-structure constant, representing changings in the EMFspatially and timely with the distance, appears to justify the conclusion: "The Big Bang is dark flow in a closed-curved and cyclic Double Torus Universe". Or in other words: "The Big Bang is spinning inside another cosmological model".

## References:

[1] Arxiv 1008.3907.v2 [astro-ph CO] November 1 2011; J. K. Webb<sup>1</sup>, J. A. King<sup>1</sup>, M. T. Murphy<sup>2</sup>, V. V. Flambaum<sup>1</sup>, R. F. Carswell<sup>3</sup>, and M. B. Bainbridge<sup>1</sup>: <sup>1</sup>School of Physics, University of New South Wales, Sydney, NSW 2052, Australia; <sup>2</sup>Centre for Astrophysics and Supercomputing, Swinburne University of Technology, Mail H30, PO Box 218, Victoria 3122, Australia and <sup>3</sup>Institute of Astronomy, Madingley Road, Cambridge, CB3 0HA, England

[2] Papers about the Double Torus Universe, formulas and predictions, to be found at [http://vixra.org/author/Dan\\_Visser](http://vixra.org/author/Dan_Visser)