

11 SPEED VECTORS ATOMS / STRINGS / SNARES WITHIN THE 3D SPACE AND TIME UNIVERSE

-) The universe passes a fixed, energy-neutral cycle of currently 29 steps / phases in 2 - 3 trillion (10^{12}) years and possibly more. This fixed cycle universe can be mathematically modeled and then quantified in detail. **Documents G7 (text) & G8 (figures).**
-) The universe consists of a thin universe-sphere-shell / USS with a maximum of one galaxy thick with a radius of currently around 3.5 - 4.5 billion light years. This shell is divided into 4 - 20 million identical clusters, each filled with 2 - 4 thousand galaxies. The universe is a giant balloon with one fixed **center C**. We observe that universe exclusively via the extremely low concentrations of hydrogen present in the USS. That is why the Earth apparently is in the center of that universe. **Figures 36q and 36r of G8.**
-) The universe itself as a whole is based on a three-dimensional 3D coordinate system with one fixed **center C** as absolute zero. Every point in that universe-sphere-shell, but also all points inside and outside can be named via just three coordinates!
-) Within that 3D space of the universe / universe-sphere-shell the same 11 speeds / identical motion vectors are present within each cluster. At the location of each cluster, the universe can be seen as a slightly convex and almost "flat" surface.
Apart from the uniform expansion rate, the other 10 motion / speed vectors consist of rotational movements of circles / ellipses that are all located within that locally very slightly curved "flat" surface of the universe-spherical-shell.
-) The effects of those 11 speeds can be found both qualitatively and quantitatively in all atoms in the universe; therefore also in all measuring instruments on planet Earth. Thanks to those speeds, atoms generate gravitation, physical and chemical forces and bonds.
-) The effects of those 11 speeds on measuring instruments are mainly expressed quantitatively with precise measurements that take place near absolute zero. Also applies to measurements of cold locations in the universe that are close to absolute zero.
-) The 11 dimensions in the string / string theory are equivalent to these 11 movements of atoms in the universe (and those of all measuring equipment). At the level of strings / snares there aren't 11 dimensions but only of three rotation-dimensions.
-) Everywhere in the universe, even within the "event" horizon of black holes, exactly the same linearly advancing universe clock time applies to all present ordinary and all black hole matter. Differences in universe clock time are not possible within the universe! **G12.**

A.P.B. (Berry) Uiterwijk Winkel *) **, *)**

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*1) INTRODUCTION:

-) 10 – 11 dimensions:

The string / snare theory recognizes elementary particles with mass and energy with at this lowest level as much as 10 - 11 dimensions of kinetic energy and therefore 10 - 11 different velocity vectors.

These 10 - 11 different dimensions / speeds are probably derived from: a) qualitative and quantitative measurements in particle accelerators, b) via measurements with astrophysical instruments and c) with measurements in equipment that take place near absolute zero kelvin.

-) The lowest level of mass / matter:

The author sets this theoretical string / snare level more or less equivalent to the level of the **Higgs** mass particle that was found at **CERN** in 2012 - 2015 in collisions of protons in the HADRON collider. At **CERN**, however, only one Higgs (proton) mass particle was found. Until now (2020) the mirror image antiproton **Higgs particle** hasn't still been found / identified.

To find both super-symmetrical mass particles of the electron, separate research equipment still needs to be built.

-) **For the author, the whole universe is based on just 4 Higgs particles, strings, snares:** In **document F1a 2014 with figures www.uitwijkwinkel.eu** the author deduced the lowest level of *matter* the universe is based on just protons (p) / electrons (e) / neutrons (1p + 1e).

At the lowest level, this *matter* is based on only 4 different Higgs mass particles that are super-symmetrical two by two and form each other's 100% mirror image. Because of kinetic energy, those *Higgs / strings / snares* rotate around maximal 3 axis of rotation!

Those rotations clockwise or counter clockwise result in 3 deformations on these *Higgs, strings, snares*. To counteract these three distortions, those *Higgs, string snares* generate the following physically properties: 1) mass or anti-mass, 2) positive or negative electrical charge, 3) parallel or anti-parallel magnetic spin and 4) a spatial volume. Mass, charge and spin are the consequences of kinetic energy / speed!

Those 100% mirror image Higgs, strings and snares cannot cancel each other!

Mass is not equivalent to energy! No $E = mc^2$ at Higgs level. **Figures 1 - 6 F1a 2014.**

-) The author distinguishes a universe based on:

- a1) two super-symmetrical Higgs, strings, snares as the only basic building blocks of the proton / antiproton and

- a2) two super-symmetrical Higgs, strings, snares as the only basic building blocks of the electron / anti-electron.

With these 4 *elemental Higgs, strings, snares* all parts of the **Standard Model** can be built!

-) Further construction of matter from Higgs, strings, snares:

- b) The structure of Majorana particles (neutrinos and photons) is detailed in **document F1b + figures.**

- c) **Document F1c + figures** describes the structure of quarks and of the (anti) proton / (anti) electron and the transition from mass → matter / antimatter. Only equivalent matter and antimatter can annihilate with each other via $E = mc^2$!

- d) The build-up out of hydrogen of the elements of the universally valid *Periodic Table of elements* and their forces is represented in document in **F1d + figures.**

- e) The formation of black hole atoms and their forces in **document F1e + figures** and
- f) That of anti-atoms and their forces in **document C4**.

Based on those 4 Higgs, all matter in the universe is constructed out of protons, electrons and neutrons. Everywhere in the universe and within USS, starting from the nuclear fusion of hydrogen, exactly the same *Periodic Table of elements* applies.

The system of elemental forces, physical and chemical forces and bonds is also the same throughout the whole universe.

*** 2) PROBLEM DEFINITION:**

According to the author, the aforementioned distinguished 4 **Higgs** particles at that level are subject to only 3 different forms of rotation! The 3 rotations are perpendicular to each other.

Figures 1 - 6 F1a 2014 www.uitewijkwinkel.eu .

Unlike the string / snare theory, those 4 distinct Higgs particles / strings / snares on that lowest level of matter are not subjected to no less than approximately 11 speeds / dimensions consisting of: 1) time, 2), 3), 4) length / width / height and 5) - 11) unspecified speed vectors. Where do these, undoubtedly, qualitatively measured dimensions come from? What do those dimensions actually represent?

*** 3) QUESTIONS:**

The question is now at the lowest Higgs, string, snare level:

- a) From a more three dimensional rotation of all Higgs particles around their longitudinal axis, latitude axis, and elevation axis instead of an 11 dimensional movement?
- b) That those 11 measured movements / rotations / dimensions are not present at the level of Higgs, strings / snares but only at the much higher level of atoms / molecules? That it concerns 11 movements to which all atoms in the universe are subject, possibly even to the level of the universe?
- c) These 11 movements of atoms in the universe each leave their own footprint on all atoms and specifically used on all atoms of the measuring equipment.
- d) Are these 11 movements in the universe / footprints increasingly reflected in measurements as these measurements take place; 1) becoming more accurate and 2) these take place ever closer to absolute zero kelvin,
- e) Are those measured 11 dimensions in the Higgs / string / snare theory actually these 11 speeds of all atoms in measuring equipment within the universe?
- f) If so, these 11 dimensions should in fact be considered as a type of "measurement errors" or as incorrect interpretations and explanation of measurements?

*** 4) ANALYSIS SPEED VIA MACRO CONSIDERATION UNIVERSE:**

In **documents G7 & G8** the author described the energy-neutral cycle that repeats the universe endlessly in 29 steps and in a period of 2-3 trillion (10^{12}) years or more for one cycle. The universe always goes through the same cycle. We now live in the infinite universe / universe cycle +1.

Science now assumes our universe started 13.8 billion years ago with a superhot Big Bang. After all, only 13.8 billion light years from that universe can be observed because photons are transformed back into protons, electrons and hydrogen!

The current universe, however, started already about 40 - 45 billion years ago with a super-cold Little Bang (**document G6**) that took place at 0 kelvin and originated from one super-

large black hole. In the preceding universe, gravitation had accumulated all mass, matter, and all kinetic energy of that universe in that Little Bang black hole. The universe in fact is a 100% closed system for all mass, matter and kinetic energy (**9 Laws of the universe in document G4**).

At the end of each cycle, gravitation forms that Little Bang black hole with a radius of approximately 25 - 50 million km over and over again around the fixed **center C**. That **center C** always remains exactly in the middle of that black hole and middle of the universe and remains situated there throughout the entire cycle of the universe. That *Little Bang black hole* contains all the mass, matter and kinetic energy of the universe that has been brought together by gravitation in the preceding period.

4.1 ALL FORMS OF BLACK HOLES ARE EXTREMELY UNSTABLE:

In that *Little Bang black hole*, the electron shells of the present black hole atoms repel each other via their electrical and magnetic spring tension (**F1d**). Just like with gases, but much more powerful! All forms of compact celestial bodies / black holes are therefore extremely unstable as standard!

Only the presence of sufficient gravity ($>$ **Critical black hole gravity / Cribhgra**) keeps those repelling forces / spring tension of blackhole atoms under control and keeps these repulsive black hole atoms trapped / jailed within that black hole and within this super cold (2.7 K) Little Bang black hole!

That electrical / magnetic spring tension between black hole atoms themselves also prevents a black hole from collapsing further into a singularity! The singularity of **Penrose** is physically impossible!

In the final phase of the formation of that gigantic super-cold Little Bang black hole (**G6**), that black hole eventually loses all forms of speed. With speed going towards zero, all forms of gravitation and gravitational energy also decrease towards zero. (Gravitation is not linked to mass but to the speed of atoms and their 'shell'-electrons. **Documents E3 and E3-1**)

4.2 THE SUPER COLD AT 0 K SETTLED LITTLE BANG;

FORMATION OF ONLY PROTONS / ELECTRONES; NO $E = mc^2$:

With sufficient loss of speed and therefore loss of gravitation, all forms of compact celestial bodies / black holes reach their *Critical black hole gravity* or *Cribhgra*. At that moment, the mutual electrical and magnetic repulsion / spring tension between black hole atoms becomes greater than the gravitation that until that moment held the black hole atoms together / trapped / jailed within the black hole.

That Little Bang black hole then becomes unstable and falls apart into black hole atoms that are also unstable without the protection of sufficient gravity. **Document F1e + figures**. All black hole atoms then fall apart in a number of steps into only an equivalent number of protons / electrons. This **Little Bang** does not develop according to $E = mc^2$!

During this **Little Bang** and at 0 Kelvin, those protons / electrons still organize themselves in mono-layers of alternately one proton / one electron thick. **Document G6 and figures 1 - 30 G8**.

-) Electric spring tension causes new universe to expand without inflation:

The electrical and magnetic spring tension present inside these mono-layer protons and the magnetic spring tension between the mono-layers mutually causes the new universe to expand

from the outside of the former "*Little Bang black hole*". This is done in the form of super-cold mono-layer protons / electrons that expand by approximately 1/3rd - 1/2nd of the speed of light c from the outside of the former "*Little Bang*" black hole. This starts the expansion of the next as well past universe without inflation.

The protons move in a straight line from **C**; the electrons move at substantially the speed of light c in circular orbits with **C** in the center that are perpendicular to the expansion speed. See **Figure 20 G8**.

-) Settling cold Little Bang lasts for centuries:

This expansion of protons / electrons starts without atoms and therefore without gravitational / gravitational energy and also without temperature. That peeling in mono-layers of protons / electrons and thus the entire Little Bang takes about 1,300 - 1,500 years before a hollow interior space finally arises and only then is there an expanding universe-spherical-shell.

4.3 FORMATION OF HYDROGEN, GRAVITATION AND GRAVITATION ENERGY:

After 5 - 10 billion years of expanding those mono-layer protons / electrons without atoms and without gravitation, a thin perfectly round universe-spherical-shell / USS has been formed with a radius of at least approximately 3.5 - 4.0 billion light years consisting of mono-layers protons / electrons.

During the expansion, there is an increasing distance within the mono-layers between the individual protons and electrons present. This may result in a slight decrease in the expansion rate.

At some point sufficient space has been created between individual protons and electrons in such way that each proton can capture its own "shell"-electron and then do so. Thereby, only the simplest hydrogen atom is formed simultaneously, all over the whole universe-spherical-shell / USS. That moment no other element / atom / isotope is formed. (**G6 + figures 19 - 32**)

-) With hydrogen gravitation and a huge amount of gravitational energy relative C is added to the universe and its cycle:

That hydrogen atom / molecule in turn generates gravitation and therefore gravitational energy relative to **center C** as well and further temperature. From scratch, a huge amount of gravitational energy relative to **C** is added to the universe cycle and this energy is completely free of charge! That is in fact the origin of the so-called "dark" energy in the universe.

-) Gravitation inhibits expansion of the universe; convert expansion speed into rotation speed:

From that moment (35 - 40 billion years ago), gravitation puts a brake on the expansion rate of the universe / universe-spherical-shell. The energy released during this process is converted into rotational speed / energy at various (10) different levels of rotation. In total the author now distinguishes 10 rotational levels schematically represented in **figures 63d, 63e and 63f of G8**. Those 10 rotational speeds are all fully situated within the universe-spherical-shell / USS!

However, that conversion of expansion speed to those rotation speeds already started 30 - 35 billion years ago. The present galaxies therefore rotate around their axis much faster than is possible on the basis of the Big Bang theory, which only covers 13.8 billion (light)years.

Because of these higher velocities of atoms, all 'shell'-electrons of these atoms also generate (much) more gravity than is currently assumed by Science because of the now usual fixing and incorrect coupling between gravity and mass.

Furthermore, the observed rotation speeds are part of a much larger (invisible) system of rotation speeds each generating their own gravitational vector. The observed speeds are correct and have nothing to do with "dark" matter. Those speeds are linked to a quantitatively much higher gravity than Science realizes!

4.4 THE THREE ELEMENTARY DIMENSIONS OF THE UNIVERSE:

The universe now has the shape of a thin perfectly round universe-spherical-shell / USS with a radius of approximately 3.5 - 4.5 billion light years with the **center C** always exactly in the middle. By deflecting light in the hydrogen / helium present within the universe-sphere-shell and via the H₂ / He gas lenses of galaxies (no gravitational lenses!). **Document G12.** We perceive the universe very differently. Not in the form of a universe-spherical-shell but more with the Earth in the center of the universe!

That universe-spherical-shell/balloon is currently at most one galaxy thick and expands everywhere at the same speed of approximately 450 km / s relative **center C**. **Figures 36d and 36e G8.**

Between the galaxies, the universe-spherical-shell is only up to a few light minutes - light hours thick and filled with extremely low concentrations of pure hydrogen. At the location of galaxies, He, Li and other higher elements are present as well originating the Big Bangs during the start of the galaxies that took place around 15-20 billion years ago.

That universe-sphere-shell is now subdivided into approximately 4 - 20 million nearly identical facet areas / clusters, each filled with approximately 2 - 4 thousand galaxies.

-) Universe has one fixed center C and three-dimensional system with three axes:

That universe-sphere-shell has just **one center C**. The universe as a whole is based on a three-dimensional system of axes with longitudinal axis, latitude axis and height axis with **center C** of the universe as common origin / zero point. That zero point is fixed. The direction of these 3 axes from **C** can be freely selected once. All locations / positions in the universe (universe-sphere-shell, inside and outside) can then be characterized with three numbers / coordinates! (This choice of **a fixed C** and three axes may have consequences for the **Riemann tensor**)

Due to gravitation, the expansion rate of the USS is slowed down further and further. The energy released during this process has been converted since 35 - 40 billion years ago into the rotational speed / energy of all the galaxies now present in the USS. As a result, those galaxies rotate much faster on their axis and generate more gravity than is possible based on the current Big Bang theory that would have taken place 13.8 billion years ago.

4.5 EVERYWHERE IN THE UNIVERSE EXACTLY APPLIES TO THE SAME UNIVERSE CLOCKTIME:

Time in this universe started around 40 - 45 billion years ago simultaneously with the super cold at 0 Kelvin settled Little Bang and start of the new / next universe. In the universe-spherical-shell, as well inside and outside the USS, exactly the same linearly moving universe clock time applies everywhere in the entire universe.

Within the universe and the universe-spherical-shell differences in the universe clock time are in principle impossible. That exactly the same universe clock time (UCT) also applies everywhere within black holes!

4.5.1 DIFFERENCE IN SPEED ATOMIC CLOCKS RESULTS IN DIFFERENT TIMES:

Two or more exactly identical atomic clocks indicate time differences as soon as such identical clocks are subjected to different velocities in the universe / earth. Due to differences in velocity, small quantitative changes / differences occur in all physical and chemical forces and their bonds of all atoms in these clocks. This results in differences in the time measured by these clocks forms the basis of GPS systems! The measured differences in time however aren't absolute differences in the universe clock time!

The actual universe clock time cannot be measured directly for us. This can only be deduced model-wise via the mathematical model of the universe and its cycle. The author's vision of time (and space) in **G12** has (far-reaching) consequences for scientific publications and visions that were based on the possibility of distorting time and / or space as formulated in **Einstein's** theory of relativity.

Mm

4.6 THE 11 SPEED VECTORS WITHIN THE UNIVERSE SHELL:

4.6.1 THE GROWTH SPEED OF THE UNIVERSAL SHELL:

During the first 5-10 billion years, the universe-sphere-shell expanded by approximately 1/3rd - 1/2nd of the speed of light c in mono-layers of protons and electrons. So without atoms, gravitation and without inflation. In the first long period without atoms, this expansion was hardly or not at all inhibited and remained within the framework of the speed of light. The expansion rate is assumed to be constant during that period.

About 35 - 40 billion years ago, each proton captured its own "shell"-electron. At the very same moment, the hydrogen atom / molecule was formed throughout the universe/ USS. In addition to physical and chemical forces, this hydrogen atom also generated gravity / gravitation energy and temperature in the universe-spherical-shell as elaborated in **document F1d**. From nowhere a huge amount of gravitational energy relative to the **center C** was added to the universe-sphere-shell / the universe and cycle of the universe completely free of charge!

This is the so-called "dark" energy and is the driving force behind the energy-neutral cycle of the universe. Since then, gravitation slows down the expansion of the universe-spherical-shell equally. The energy released can not be converted into heat! Only for a small part in new gravitational energy relative to **C**.

For the most part, however, this released energy is converted into new forms of rotation speed that are locally perpendicular to the expansion speed of the universe-spherical-shell. At present, around 10 different elliptical rotational speeds can be distinguished at various levels, all of which are completely situated within the universe-spherical-shell and which are all perpendicular to the expansion speed! Those currently around 10 levels of rotations started around 35 - 40 billion years ago at the level of hydrogen atoms / molecules.

Over the billions of years, that rotation has grown to ever larger circles / elliptical movements / speeds with ever greater dimensions and radius. At each higher level, the radius is at least

tens to thousand times greater. Of those 10 elliptical rotational speeds within the universe-sphere-shell are:

-) 5 - 6 rotations present within the level of individual galaxies,
-) 4 - 5 rotations present within the clusters of 2 - 4 thousand galaxies.

4.6.1.1 END EXPANSION UNIVERSE / UNIVERSE-SPHERICAL-SHELL / USS:

The elliptical movements of celestial bodies and galaxies within the universe-spherical-shell result in all kinds of collisions on all levels. In 350 - 450 billion years, gravity has reduced the expansion rate of the universe-sphere-shell to zero.

Then the expansion rate and the currently nine rotational speeds are merged via collisions to ultimately only one rotational speed of the *central cluster black hole* that includes all mass, matter and kinetic energy of the now present 2 - 4 thousand galaxies in the cluster.

All *central cluster black holes* have the same amount of mass and kinetic energy. Their rotational axes are all precisely aligned with **center C** of the balloon-shaped universe. These cluster of black holes do not exhibit any form of rotational movement.

With those preceding collisions between black holes and between galaxies, at least one of those 9 rotation speeds always disappears as well connected gravity and gravitational energy! Within each cluster, tens of thousands of **LIGO/ VIRGO** observable collisions will occur in the next many tens of billions of years before all the current 10 speeds have merged into those as the only remaining rotational speed of the *central cluster black hole*.

4.6.2 4 - 5 ROTATION SPEEDS AT THE LEVEL OF CLUSTERS OF GALAXIES:

About 5 - 10 billion years after the Little Bang, protons and electrons together form an atom and the hydrogen atom / molecule and thus also gravitation. This gravitation slows the expansion speed of the universe-spherical-shell. This now results in approximately 9 movements within the universe-sphere-shell in the form of almost circles to ellipses. In the universe-sphere-shell, those rotations start at the lowest level of H atoms / H₂ molecules. This braking results over time in rotations within the hydrogen gas in the form of equal ellipses that are located at ever higher levels within all 4 - 20 million identical clusters. At every higher level the radius of the ellipse is tens to thousands of times greater.

Over the course of billions of years, that hydrogen gas in the universe-spherical-shell also continues to cool until the condensation point of H₂ is reached at around 20 Kelvin. At that moment this gas turns into a liquid. Then the gravitation locally becomes greater than the gas pressure. Entropy disappears. Gas clouds then collapse into first small and later into ever-increasing rotating spheres of pure liquid hydrogen.

As a result of the elliptical movements on different levels, a huge number of collisions take place between those small hydrogen spheres, as a result of which a number of those hydrogen spheres become increasingly larger and the temperature of which rises further and further to millions of Kelvin. Gravitation then keeps that hot pure hydrogen gas / plasma together / trapped.

Through collisions and gravitation, approximately 2 - 4 thousand super-large, identical rotating and super-hot, gravitational-shaped hydrogen spheres are held together within each cluster, all of which are on the way to a spontaneous and simultaneously occurring super-hot

Big Bang. Radioactive material is still absent. As a result, the nuclear fusion in the hydrogen spheres / Big Bangs just starts at a much higher pressure and higher temperature than the fusion in later star formation. Each of those Big Bangs marks the birth of one galaxy. With the nuclear fusion in the central sphere the central black hole of the galaxy is created there.

The spiral arms of the galaxy arise from the 2 - 4 smaller non-rotating smaller hydrogen spheres or **Roemers**. No nuclear fusion occurs in these **Roemers**. During those Big Bangs, both the central black hole of the galaxy and the 2 - 4 spiral arms of the future galaxy are formed. Universally, these Big Bangs occur almost exactly simultaneously (universe clock time)!

-) All forms of electromagnetic, cosmic and particle radiation are exclusively transported through the universe-spherical-shell and maximal the speed of light:

All radiation from photons, cosmic radiation and particle radiation released with these Big Bangs can only move within the matter (especially H_2) present in that thin universe-sphere-shell and can only move there. This radiation cannot move through the absolute vacuum space on either sides of the universe-spherical-shell. This results as well in a 100% closed universe for mass, matter and kinetic energy! All forms of radiation are all held at the speed of light c .

-) For gravitation and time, for the time being the only non-electromagnetic forms of "radiation", those limitations do not apply; gravity and time moved on all sides through the whole universe and with speeds \gg the speed of light c :

These limitations do not apply to gravitation and time. Gravity moves from the "shell"-electrons of atoms on all sides, also through the absolute inner and outer vacuum of the universe! Because of this dilution, gravity is so extremely weak (c^{-4})!

Time moves linearly from **center C** of the universe with also infinitely high speed. Everywhere in the universe therefore exactly the same universe clock time also applies within and inside black holes as well!

-) After those Big Bangs, the universe-spherical-shell is superhot for billions of years:

The energy emitted during these Big Bangs is trapped 100% within the universe-spherical-shell and keeps this USS extremely hot over a period of billions of years. However, within a period of 13.8 billion years, those photons of light and infrared and particle / cosmic radiation are all transformed back into protons, electrons and ultimately into new hydrogen. Only then the universe-spherical-shell can cool down.

Within each cluster, two to four thousand galaxies with two to four spiral arms and around their own central black hole arise simultaneously as a result of gravitation.

Stars only come into existence after the photons emitted by the Big Bangs have been transformed into matter / H_2 within 13.8 billion years. Only then the plasma in the universe-sphere-shell can further cool down and transform into gases, liquids and solids. This cooling and formation of liquids and solids occurs step by step with hydrogen and helium as the last. However both gasses not further than a liquid. The gas pressure / entropy in the USS disappears with the complete condensation of H_2 / He.

Within each cluster, those 2 - 4 thousand macro-galaxies are all subject to the same approximately 4 - 5 different ellipse-like movements $V(r1) - V(r5)$. Those movements / speeds $V(r1) - V(r5)$ are shown schematically in **Figures 63d and 63rd document G8**.

At every higher level the radius of the ellipse becomes a factor of hundreds to thousands of times greater. Almost impossible to grasp in one figures!

These movements guaranteed in the past and also will guarantee all sorts of collisions between all galaxies in the future. Over the next 350 - 450 billion years, gravity continues to slow the expansion rate of the USS towards zero.

For all clusters of 2 - 4 thousand galaxies, those collisions result in that only *one central cluster black hole* with only one rotational speed will remain. All rotational axes of that central cluster of black holes are precisely aligned with **center C**.

All atoms in each of those 4 - 20 million clusters are now undergoing the same 4 - 5 ellipse movements $V(r1) - V(r5)$ within each cluster in addition to an equal expansion rate.

4.6.3 5-6 ROTATION SPEEDS ATOMS WITHIN ALL GALAXIES:

Those billions of Big Bangs of galaxies occurred around 15 - 20 billion years ago. Before those Big Bangs billions of identical fast rotating central superhot hydrogen spheres (**R1A**) were formed by gravity each with an amount of pure hydrogen equal to hundreds of billions of stars.

Around every central globe (**R1A**), 2 - 4 smaller and less hot pure hydrogen spheres (**Roemers**) were formed rotating in the local plane of the local universe-spherical-shell. Those 2 - 4 **Roemers** themselves do not rotate around their axis! The entire rotating system is in balance through gravitation. Those billions of identical central hydrogen spheres and 2 - 4 **Roemers** are getting bigger and hotter in time. Phase 15 cycle of the universe **G7**.

At the same moment, nuclear fusion starts simultaneously in those billions equal large and hot pure hydrogen spheres present in the USS. As a result of nuclear fusion "shell"-electrons of atoms are bound to the atom core. Thereby an enormous amount of energy is released in the form of photons and gravity is lost.

As a result of that nuclear fusion, the central hydrogen sphere loses an estimated 13-15% of its present gravity during the Big Bang. No nuclear fusion in the smaller / cooler **Roemers**. Due to the loss of gravity in that central sphere, these 2 - 4 **Roemers** are thrown away / ejected in the plane of the local universe-spherical-shell during these Big Bangs. These **Roemers** evaporate due to the heat from the Big Bang, which is supplied via the HBS and remains concentrated within it. **Figure 36o G8**.

-) Central fused sphere collapses into central black hole galaxy:

In the central sphere, the electrons collapse shells of the formed elements $\geq Be$ during this Big Bang in the direction of their atomic nucleus. The ordinary atoms $\geq Be$ just formed thereby shrink completely to black hole atoms. The central part of the fusion area therefore collapses into the rapidly rotating central black hole of the coming galaxy.

The majority of the rapidly rotating hydrogen of the large central sphere (about 85%), however, does not fuse and is blown away especially in the plane of the direction of rotation or in the plane of the local universe-spherical-shell together with the outer part of the fusion region. **Figures 42 - 54 G8**. With those Big Bangs, all elements of the Periodic Table are constructed.

Due to the loss of gravity in the large central sphere, the equilibrium is broken and the 2-4 spheres / **Roemers** are flung away in the plane of the slightly curved universe-spherical-shell.

Due to the enormous amount of energy released from the Big Bang, these cousins completely evaporate hydrogen spheres / **Roemers** into plasmas. The gravitation of these **Roemers**, however, also pulls the emitted matter back into the plane of the universe-spherical-shell.

That entire process of these Big Bangs is described in **phase 16** of the universe cycle (**G7 (text) + G8 (> 130 figures)**) and is outlined in **figures 42 - 54 of document G8**.

At the same moment as these Big Bangs of galaxies occur, both the central black hole of the coming galaxy and the 2 - 4 spiral arms of the galaxy emerged from the 2-4 **Roemers** flung away and evaporated into plasma.

All electromagnetic radiation and particles will continue to move within the universe-sphere-shell for a maximum of approximately 13.8 billion years until these photons and particles are converted back to protons, electrons and hydrogen. Only then the plasma in the USS can further cool down to become pasty solids and eventually cool down to the various points of condensation of these gases. Turning into liquids the gas pressure and entropy is lost. In the meantime, the expansion rate of the USS is still being slowed down and converted into rotations of the developing galaxies (rotation of the central black hole + 2-4 spiral arms). This concerns, the rotation of the galaxy itself **V(r1)** and that of the spiral arms within it **V(r6)**. **Figures 63d and 63f**. Thereafter, the hydrogen gas and ultimately also the helium gas formed during those Big Bangs cools to the condensation points of approximately 20 kelvin for hydrogen or up to approximately 3 kelvin for helium.

This condensation of plasmas into liquids in the spiral arms together with gravitation results in a large variety of solar systems with a large variation in rotations **V(r7)** of neighboring solar systems. All stars are subject to their own rotation **V(r8)**. All present planets and moons are subject to their own rotations **V(r9)** about their star and the own rotation of the planet itself **V(r10)**. At least 6 forms of rotation can be distinguished within all galaxies. **Figures 63d and 63f**.

-) A total of 9 - 10 different rotational movements within the universe-sphere-shell:

All atoms within the universe are now subject to no less than 9 - 10 rotational movements in addition to the expansion rate. Each of those 10 - 11 movements in itself leaves its own specific footprint in the orbits of all the "shell" electrons of all the atoms present!

This number of 10 - 11 movements of atoms in the universe is equal to the number of assumed dimensions in the string / string theory! But aren't present at that level!

*** 5) DISCUSSION:**

In this document, the universe is presented as a giant balloon with a radius of 4 - 4.5 billion light years and with the thickness of no more than one galaxy. Between those galaxies, that universe-sphere-shell is extremely thin for a few light hours / light days and consisting of an extremely low concentration of 100% pure hydrogen gas. Near the galaxies it consists of a mix of hydrogen, helium, lithium and ions from higher elements.

That universe-balloon shell has one fixed **center C**. Viewed from **center C**, a three-dimensional system / space applies. Every location / point in that universe and of that universe-sphere-shell can be described via just three coordinates! The tensors may need to be adjusted.

We can hardly imagine that within that form of a universe-sphere-shell every atom can undergo no less than 10 different rotational movements. With the expansion rate, it concerns no fewer than 11 different movements / speeds.

The effects / footprints of those 11 movements in the universe on the 'shell' electrons of atoms are becoming more and more apparent as: a) measurements become more accurate and b) they are performed near absolute zero Kelvin. Then one more and more emphatically measures the effects of those 11 movements in the universe on the atoms and in particular those of the atoms present in the measuring equipment. One does not then measure the dimensions of the strings / snares themselves.

*** 6) CONCLUSIONS:**

1) All atoms in the universe / the universe-sphere-shell are now subject to approximately 11 different movements / speeds: a) one expansion rate and 9 - 10 perpendicular rotational movements that all take place within the slightly curved universe-sphere-shell and thus situated within the three dimensions of the universe.

2) Of those 9 - 10 rotational speeds, 5 - 6 are located within all galaxies. Approximately 4 - 5 different rotation speeds are located within all identical clusters of 2 - 4 thousand galaxies. **Figures 63d, 63e and 63f document G8.**

3) These movements are characterized in that they have an elliptical shape, the radius of which radius is increasing tenfold - hundredfold. Each rotational movement fits completely within the plane of the movement at the next higher level.

4) Within all galaxies, these 5 - 6 movements are coordinated in such a way that all stars and their planets collide with each other and are ultimately swallowed up by the central black hole of the galaxy in 350 - 450 billion years.

5) Within all 4 - 20 million identical clusters, each with 2 - 4 thousand galaxies, 4 - 5 movements apply on a much larger scale. These movements / speeds are such that all 2 - 4 thousand galaxies always collide with each other. For all clusters, this ultimately results in one central cluster black hole. All central cluster black holes have the same shape / properties and all rotate in the same direction with approximately 1/3rd - 1/2nd of the speed of light c .

6) That number of 11 measured speeds is equal to the number of 10 - 11 dimensions assumed in the exact Science in the string / snare theory.

7) In 350 to 450 billion years the expansion of the universe-spherical-shell will then end, which will then consist of 4 - 20 million central cluster of black holes. All central cluster black holes have the same amount of mass, matter and kinetic energy.

8) Under the influence of gravity, the universe-sphere-shell shrinks again towards center C where 2-3 billion years later the new Little Bang black hole is formed again and the next Little Bang takes place. Then the next exactly equal cycle of the universe starts.

A.P.B. (Berry) Uiterwijk Winkel MSc
Zwijndrecht, The Netherlands
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