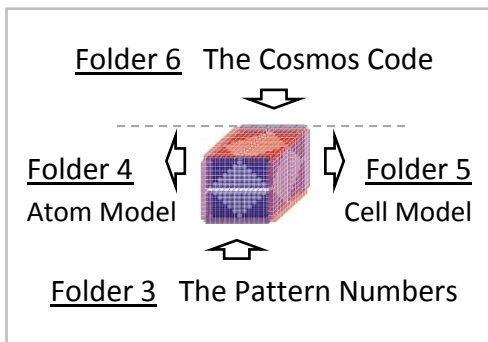# The Cosmos Code

The geometric code of light and life

The cosmos code hypothesis states that the universe was formed according to a geometric code, a cube that represents energy and information. This cube consists of cells that are organized in layers and cones. Three Light-cones form the light code and four Life-cones form the life code. The different modules of the code cube match, for example, the light spectrum, the genetic code, spacetime and gravity.

The code cube is an expression of the Pattern code which is derived from the cluster of spheres.

Cluster of Spheres   The Pattern Code   The Code Cube

Cuboctahedron
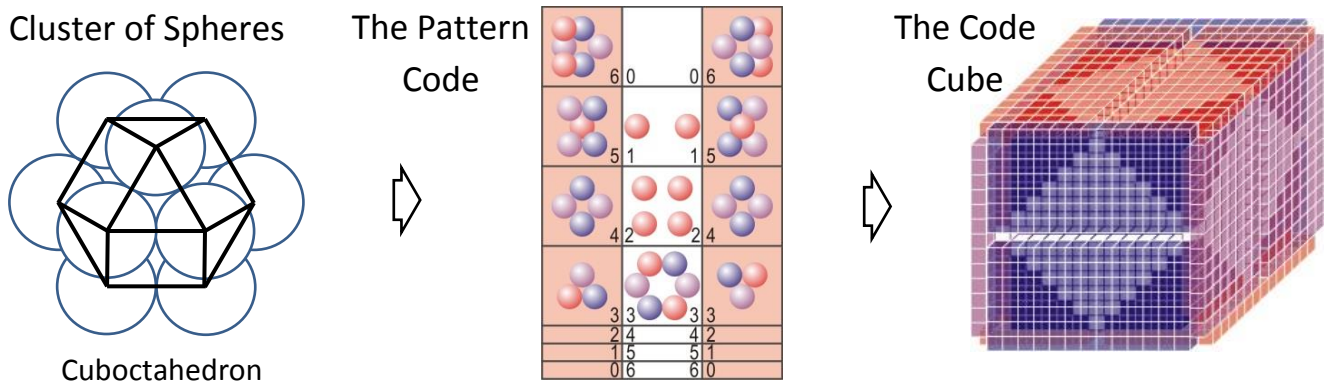
A code is a system used for coding (encoding and decoding). A code could be a set of symbols, a pattern, a model, a (computer) program, cipher (secret writing), a set of notes (for playing music), alphabet (a set of letters for writing text), mould (something physical used as a guide), and law (prescribing behaviour).

Folder 6   The Cosmos Code

Folder 4   Folder 5
Atom Model   Cell Model

Folder 3   The Pattern Numbers

The cosmos code hypothesis that is described in Folder 6 provides a detailed description of the 'code in the cube'.
The Encoded Earth is a book that comprises Folders 3, 4 and 5. Folder 3 explains the Pattern number origin of the code cube which is also called the cleft cube or the Pattern Cube. The book also describes the atom model in Folder 4 *The Geometric Standard Model (GSM)* and the cell model in Folder 5 *The Pattern cell*. Both these models are based on the code cube.
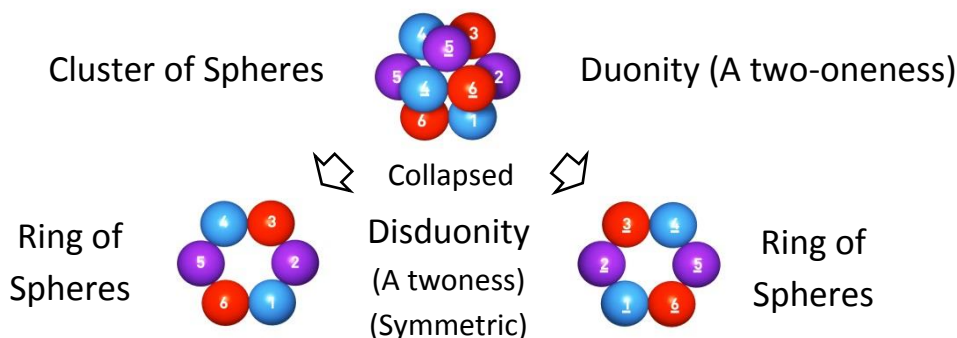
The universe manifests the cosmos code like a body the genetic code.

The Duonity Code

The cluster of spheres, also called the Pattern cluster, that is shown below represents a duonity state. The two rings of spheres below the cluster represent the disduonity, or collapsed state of the cluster.

Cluster of Spheres   Duonity (A two-oneness)

Collapsed

Ring of Spheres   Disduonity (A twoness) (Symmetric)   Ring of Spheres

What is duonity? Duonity is the two-oneness of things and refers to a state in which two things are entangled or congealed in a higher-dimension. It could be compared to a superposition in the quantum context. Properties of things in a duonity state are counter-intuitive. For example, the two rings of spheres (above) could be described as one ring surrounding, and being surrounded, by the other ring.

The 3-sphere

The cluster of spheres could be viewed as a model of a finite spacetime which has no boundary. It represents a three-dimensional space that curves in the fourth space dimension. It is similar to a Mobius band, only in higher dimensions (see also *Duonity Dynamics* in duonity.com). The cluster of spheres could be a model of Einstein's 3-sphere proposal that formed the basis of his work in 1917 to solve the problem of the boundary of the universe.

Information

Scientists use 'Shannon information' which is defined as $S = \log_2 N$ with N being the number of alternatives. S equals 1 if N = 2 and this unit of measurement is the 'bit'. (See *Reality is not what it seems* by Carlo Rovelli, published by Allen Lane, 2016, for an explanation of information, and also the 3-sphere.) The Shannon information is a special case of the Pattern information which is described by means of the Pattern numbers (see Folder 3). A Pattern number (pnc) is defined as (a + b) = c with a and b natural number pairs. Shannon information equals pn1 and is written as two equations (0 + 1) = 1 and (1 + 0) = 1.

EnergyInformation

EnergyInformation is a duonity but it could be more readily understood if approached from the perspective of energy and information disduonity. The drawing below shows the disduonity scenario by means of an electrical circuit analogy. The energyinformation duonity scenario is a superposition of the two circuits.

Energy (Transitions)   Current   Light (Radiate)

Information (Combinations)   Copy   Life (Generate)
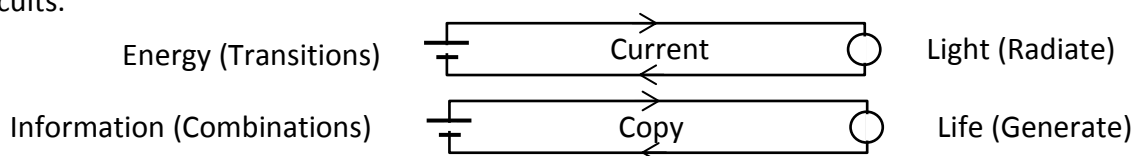
The code cube with its layers and cones represents an energy and information disduonity while the cluster of spheres represents an energyinformation duonity.

The cluster of spheres is not in spacetime; spacetime is in the cluster of spheres.

The Code Cube

The code cube is assembled from 3024 (1512 + 1512) cells (cubes/spheres) plus 351 (294 + 56 + 1) virtual cells. (The '+ 1' virtual cell is the core of the code cube.) It consists of six concentric cubes plus an outer cube cover. The smallest concentric cube is composed of 12 cells plus 15 virtual cells (see P06:8 for a drawing of this cube). The cover consists of 12 plates, and each plate measures 91 (7x13) cells.

The Pattern Number 6 Code Cube

The code cube is the realisation of the cubed Pattern number 6 pair, i.e. $(a + b)^3 = 6^3$ & $6^3 = (a + b)^3$. The cubed pn6 pair equals $6(aa + ab + ba + bb) = 6cc$ & $6cc = 6(bb + ba + ab + aa)$. If the Pattern values (a = 6, 5, 4, 3, 2, 1, 0 and b = 0, 1, 2, 3, 4, 5, 6) are substituted in these equations and, if the numbers obtained are 'realized' by fitting cells equal to the numbers in a structure the code cube then results. The code cube could be separated into three 'component cubes' as shown below:
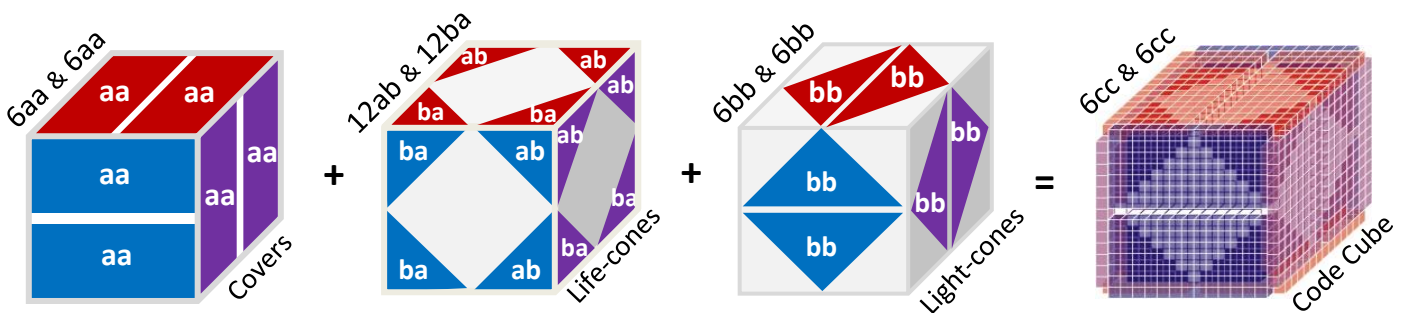
Note that the cubed pn6 equals 6(squared pn6) and also 6(6(pn6)). The final sum of a cubed pn6 is 6x6x6.

The Pattern equation pair that is derived from the Pattern code and which is the same as the pn6 pair, emanates also from the rings of spheres in P06:2 (see also P10:3 in *The Creation's Pattern*).

## The Past, Present and Future of the Code Cube

In his book *Reality is not what it seems* Carlo Rovelli writes: *"Between the past and the future of an event (...) there exists an 'intermediate zone', an 'expanded present'; a zone that is neither past nor future."* The three component cubes could map, therefore, onto three 'time zones' as follows: The aa-cube (covers) represents the past, the ab/ba-cube (Life-cones) the present and the bb-cube (Light-cones) the future.

The Three Types of Gravity of the Code Cube

The three component type cubes could also represent three gravity types. The Light-cones then manifest the 'open' gravity, the Life-cones the 'close' gravity and the code cube cover the 'cover' gravity'. The three gravity types are identified by their 'signature sequences' as shown below. Note that the term 'gravity' in the code context refers to the law of constant acceleration.

## The Gravity Profiles of the Code Cube

The shadow diagram on the right shows the three module types of the code cube. The bb-cones (open gravity) have the 1^2, 2^2, 3^2, 4^2, 5^2, 6^2 quadratic sequence (a constant acceleration profile), the ab/ba-cones (close gravity) have the extended and tapered 1^2, 2^2, 3^2, 4^2, 5^2, 6^2, 4^2, 2^2 (diagonal) quadratic sequence and the aa-covers (cover gravity) have the 'compressed' sum of 91 cells (36 + 25 + 16 + 9 + 4 + 1 = 91). The area of each cover measures 7x13 cells.

Shadow Diagram
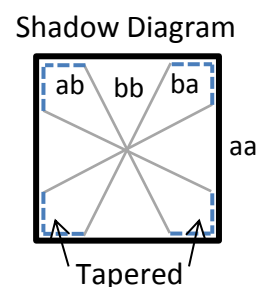
The three types of gravity (constant acceleration) of the code cube represent a single universal force.

The Light Code

The light code consists of the virtual clefts of the three Light-cones of the code cube. The bb-modules of the red Light-cones are shown below (left) and the virtual cleft pair of the red Light-cone is shown on the right. (A spacetime type light cone, with past and future halves, compares with two aa-modules and two bb-modules of the code cube. The four bb-cones of the Light-cone shown below are, therefore, actually the future halves of a pair of Light-cones. Their past halves are compressed to form their aa-cover pairs.)
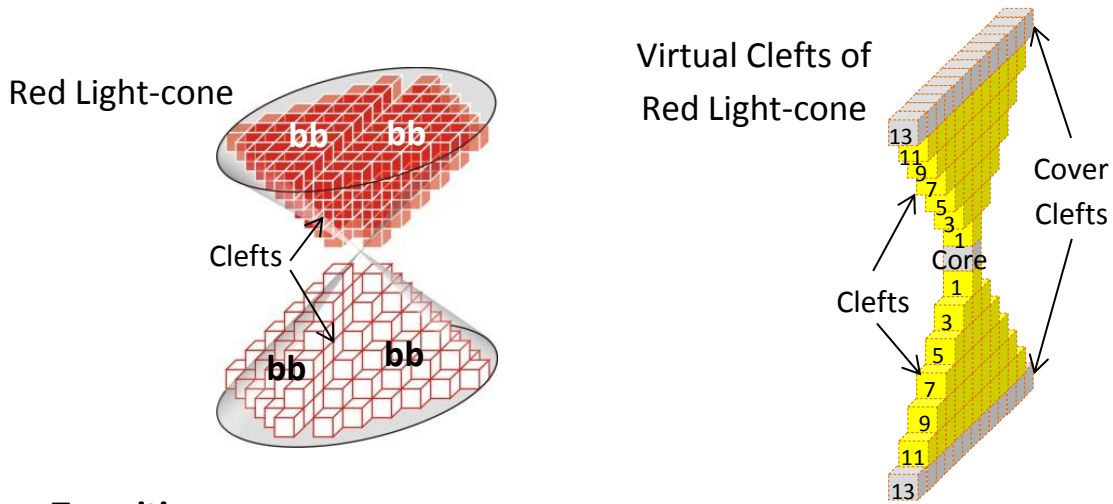
Quantum Transitions

Each bb-module of a Light-cone consists of six layers with 1, 4, 9, 16, 25 and 36 cells as shown below on the left. On the right is a representation of the Schrödinger wavefunction energies and the number of nodes in each energy layer. (The diagram is from a physics course of the Colorado University. See PP2:1.) The wavefunction energies in the wave diagram correspond to the first four layers of the bb-module.
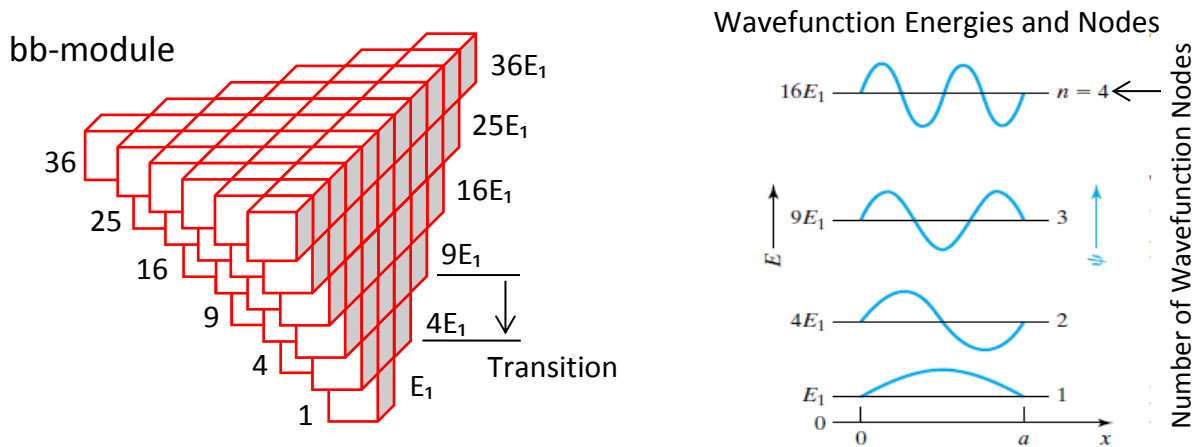
The quantum transition condition is given by $hf = E_{(initial)} - E_{(final)}$, where f is the frequency, h the Planck constant and E the energies of the two different orbitals. The photon (hf) that is absorbed or emitted by an electron transition is determined by its frequency. If the transition condition equation is applied to the different layers of the bb-module then the frequencies of the resulting photons are: 1, 3, 5, 7, 9 and 11. These numbers are the same as the number of cells in each layer of a cleft as shown at the top.

The layers of a bb-module, therefore, represent electron orbitals, and the layers of the corresponding clefts represent photons (see The Atom Match Map in *The Pattern of All Things* in thepatternbook.com).

The virtual parts of the code cube represent bosons, the non-virtual parts represent fermions.

The Colour Code

In P06:4 it is shown that the layers of the clefts of the code cube represent photons. Photons are emitted or absorbed when an electron jumps between the orbitals of atoms. Each cell of a cleft represents a wave node (see PP2:2 for an explanation). Each layer of a cleft, therefore, represents one photon with a specific frequency that depends on the number of nodes in a layer. A photon carries energy proportional to the radiation frequency (E = hf) which determines the photon's colour. One cleft, therefore, represents six differently coloured photons as shown below, on the left.

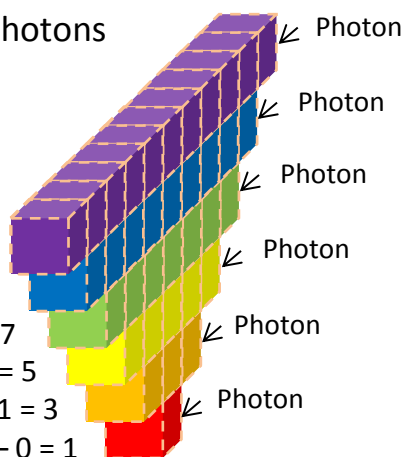### The Cleft Photons

Quantum
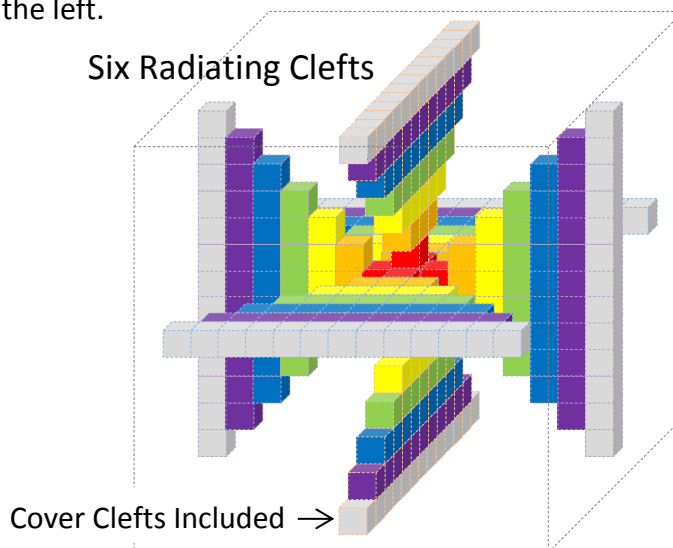Transitions

$36 - 25 = 11$
$25 - 16 = 9$
$16 - 9 = 7$
$9 - 4 = 5$
$4 - 1 = 3$
$1 - 0 = 1$

↙ Photon
↙ Photon
↙ Photon
↙ Photon
↙ Photon
↙ Photon

Six Radiating Clefts

Cover Clefts Included →

The six coloured clefts of the code cube are shown above, on the right. Each virtual cell of a cleft 'contains' a copy of the six clefts owing to the fractal nature of the code cube (see P06:10). The orthogonal nature of these clefts could perhaps be the cause for the polarization of light.
(The cover clefts are explained in P06:8.)

Light Spectrum

A cleft represents the visible light spectrum. The colours are not gradually changing into one another as those of the natural (spherical) rainbow. This is due to the discrete (quantum) structure of the clefts. The light spectrum has been, and still is, the key mechanism for the discovering of the secrets of the universe.
'Nineteenth-century experimenters found dark lines in the Sun's spectrum and the spectra of stars, and bright lines in the spectra of light emitted by different gases heated to incandescence in the laboratory. Some of the various patterns of dark and bright lines matched – a discovery that unlocked the code of cosmic chemistry.'
                                                Quotation from 'Stars' 1989, Time-Life Books

Genotype – The Code in Crystal

The universe could be the phenotype of a genotype that is made up of crystals - crystals that 'contain' the photons and the codons of the cosmos code. This is similar to a body that is the phenotype of a genotype, a genotype made up of DNA crystals that contain codons from the genetic code (see P06:6).

A crystal is a regular arrangement of atoms, typically in 3D. A salt crystal, for example, consists of a lattice of sodium (Na) atoms interspersed with chloride (Cl) atoms. A salt crystal emits (yellow) photons when heated. Gemstones are a type of crystal that emits photons of different colours at room temperature.

A string of DNA is also a type of crystal, a bio-crystal with regularly spaced atoms that form codons.

The electromagnetic (light) spectrum is the code that unlocks the secrets of creation.

The Life Code

The code cube contains four Life-cones. Each Life-cone consists of an upper and a lower cone in two opposite vertices of the cube (see one such cone pair below, left). Each half of a cone pair consists of three ab/ba-modules of the three different colours, red, purple and blue. The three modules enclose six of the eight virtual cells, or links, of a code chain. The eight virtual chains of the four Life-cones represent the genetic code, or life code (below, on the right).
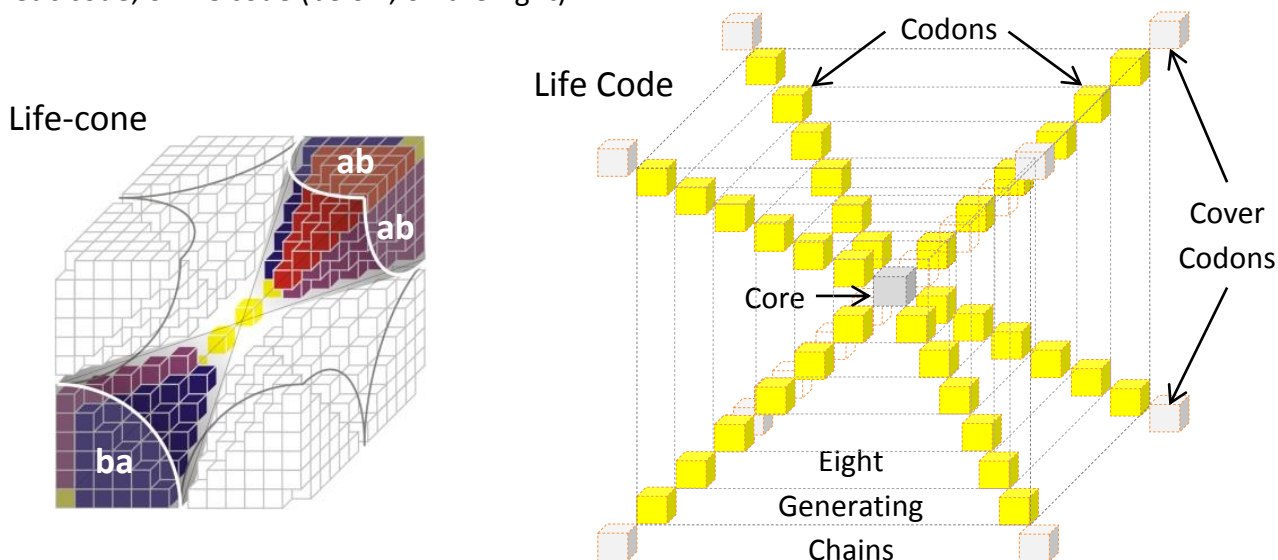
Life-cone

Life Code

Genetic Combinations

Each virtual cell of the life code represents one RNA codon which is a combination of three RNA bases. The vertices of the 6 +1 concentric cubes of the code cube together with the vertices of its core, represent the 64 codons of the life code. The eight codons of the code cube core are shown below for illustration.

The Core Cube

The Eight Codons of the Core
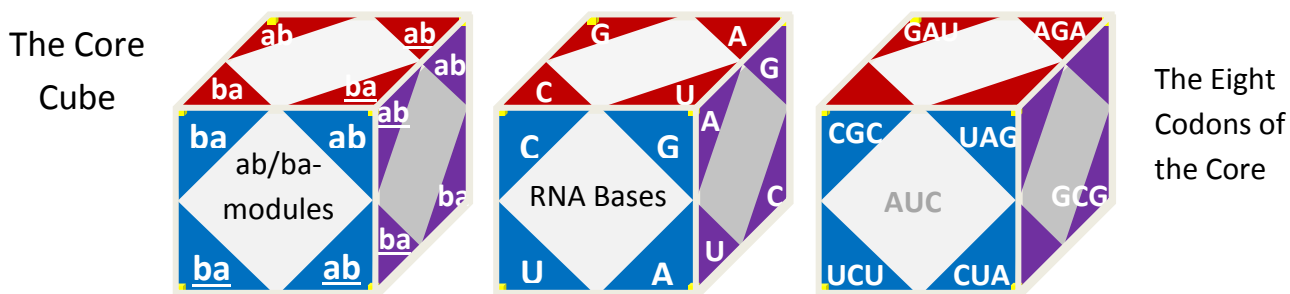
Each core codon is the first link of one of the eight radiating codon chains shown above (at the top). For example, the chain starting with core codon CGC is: CGC, CGU, CAU, CAC, UAC, UAU, UGU and UGC. (All 64 the codons are listed in the Geometric Genetic Code map - see P04:12).

There is only one base change from any codon to the next codon. This characteristic of the life code makes it a type of Gray code. The genetic code could be converted into a binary system if the GC bases (ab, ba) are equated to a 0, and the AU (underlined) bases (ab, ba) are equated to a 1. The chain above then reads: 000, 001, 011, 010, 110, 111, 101 and 100 which is a proper Gray code. Gray codes are less error-prone than standard binary codes.

The eight codon chains represent eight basic genes and could, for example, be used as unique identifiers to distinguish among eight different types of proto-organisms or even eight body parts. Hox type genes are a set of eight genes that define body plans of developing organisms (see P05:8).

A genome is a unique genetic identifier of a body. It could, therefore, be used as a kind of (genetic) name.

The Invisible Code

The Light-cones and the Life-cones of the code cube share the same 'horizons', i.e. the surfaces where the Light-cones end and where the Life-cones begin. Light-cones are visible while Life-cones are invisible owing to the fact that Life-cones occupy the 'present' space of the code cube (see P06:3). Another consideration is the fact that Light-cones, by definition, 'contain' all the light of the code cube. The close gravity property of a Life-cone could, perhaps, cause it to be a kind of (close gravity) 'black hole'.

The Symmetric Periodic Table

The Symmetric Periodic Table (SPT) is a 3D representation of the periodic table of the chemical elements (see The Atom Match Map in thepatternbook.com). A slice of the SPT is copied below. It shows the invisible orbitals (concentric layers of the ab/ba-modules) of Life-cones as coloured areas in both the plate pair (the cubical rendition) in the centre and the discs (the spherical rendition) on the sides. The invisible orbitals are the (complemented) s̄, p̄, d̄ orbitals that are indicated in the plate pair.
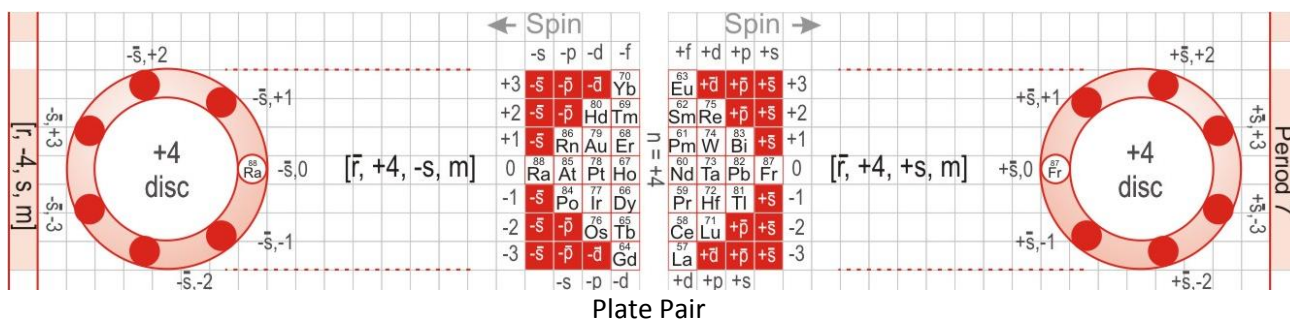

Plate Pair

Invisible Orbitals

The invisible orbital shapes of the Life-cones are different (but complementary) to the visible orbital shapes of the Light-cones. The middle column of the orbital configuration table (on the right) represents the orbitals of the Light-cones while the configurations in the two side columns of the table represent the invisible orbitals of the Life-cones. The invisible orbitals complement the visible orbitals to enable the formation of standing waves. The invisible orbitals are not part of the standard periodic table.

The Pattern Orbital Table

(The upper part only)
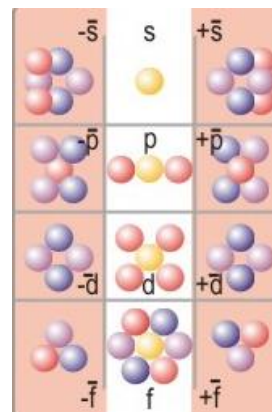
Invisible Matter

The cells of the Life-cones typically represent electrons, but they could also represent atoms or other 'particles' (see P06:10). There are, therefore, also invisible atoms (and planets, stars, etc.) in Life-cones.

Invisible cells enclose codon chains in the 'life' context (see Folder 5) and gluons (the glue that holds protons and neutrons tight) in the 'light' context (see Folder 4). The peculiar 'elastic band' characteristic of gluons could be a consequence of its being of the close gravity type (of Life-cones) (see P06:3).

Life-cones, therefore, are invisible 'black holes', but unlike typical black holes, very structured because they are static codon combinations that underlie all of life. Protons and neutrons could perhaps also represent such 'black holes' (see P06:11). The possibility that invisible ab/ba-cones are at the centres of galaxies is presented in the macro view of the 'Collapsed Galaxy Model' that is shown in P06:11.

The invisible Life-cones could perhaps be a clue to help resolve the dark matter mystery.

The Core and the Cover Code

The core and the cover of the code cube represent the origination and the termination, the start and the stop of the code. Originally, before the mooted general collapse (see P06:11), the core and the cover had been a duonity that is typically represented by the cluster of spheres (see P06:2).

The Core

The core is self-symmetric w.r.t. the code cube. The virtual clefts and chains of the light code and the life code start at the core. The first set of eight codons fits inside the core (see P06:6). The core represents a graviton or the Higgs boson (see P04:9, 11). The two drawings below show the core in the cube context.
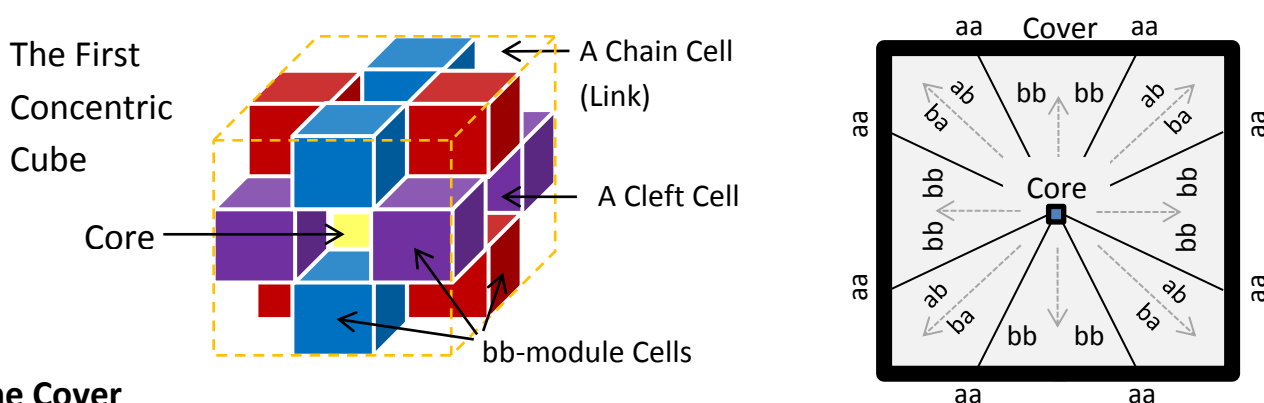
The Cover

The cover of the code cube consists of twelve compressed aa-modules of which only the top red pair is shown below. The cover cleft and the cover codons are also indicated.
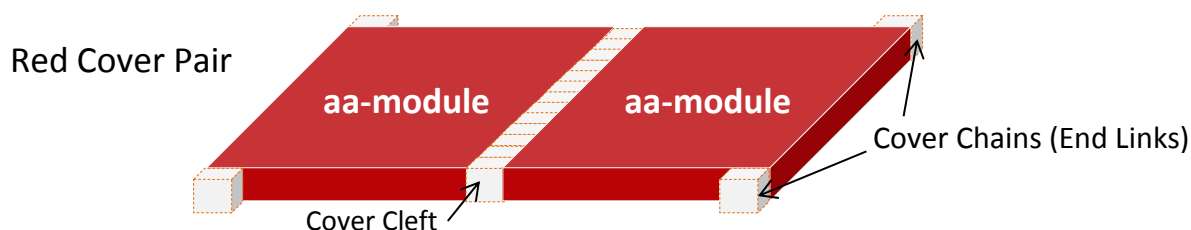
The aa-modules were originally similar to the bb-modules, but opposite in orientation as indicated by their quadratic sequences (see P03:6). In the context of the Symmetric Periodic Table (SPT), the cover represents anti-matter (see The Atom Match Map in thepatternbook.com.)

Cover Gravity

The cover of the code cube serves as the stop, or end, of all the radiating open gravity sequences. To ascribe a kind of gravity property (see P06:3) to the cover may be a misnomer because there is no quadratic sequence in its compressed form, but, its aa-modules were originally identical although opposite in direction, to the bb-modules that represent open gravity. In its compressed state the cover could function as a gravity stop, or gravity limiter. The stop, or limiting, property of the cover extends to the clefts (the light code) and the chains (the life code) as shown above.

The close gravity ab/ba-modules also extend to the cover, albeit only at the vertices of the code cube. The close gravity sequence, however, includes a short steep tapering (deceleration) sequence, i.e. 6^2, 4^2, 2^2. The 'elastic band' profile (constant acceleration/deceleration) of close gravity therefore exhibits a self-limiting (elastic limit) property and doesn't need the cover for limiting, as does open gravity.

The cube cover is an interface, like a skin, between inside and outside, between light-ness and dark-ness.

The Code Cube States

Each cell of the code cube could be addressed uniquely by means of the four Pattern state numbers. The four numbers represent a Pattern State Identity (PSI), or address, for each cell. The numbers represent 4D state vectors. (The Pattern Map in thepatternbook.com could be used as a reference to assign PSIs.)

Pattern State Identity (PSI) System

The PSI system is based on four coordinates **[c, n, s, m]** inside square brackets. Pattern state number **c** is for colour, **n** is for the energy level, **s** is for shape as well as spin (the '**+**' sign and the '**-**' sign of **s** take care of the quantum spin number) and **m** is the distance of a cell from the middle row of a layer of cells (where **m** = 0).

A comparison between quantum numbers and Pattern state numbers is given below. The cube on the right shows how the signs of the values of Pattern numbers **s** and **m** are to be determined.

The Pattern State Numbers		The Quantum Numbers	
Colour of Light-cones	**c**	None	
Layers of Light-cones	**n**	**n**	(energy level)
Shape and spin of cells	**s**	**l** and **s**	(orbital shape and spin)
Deviation (from middle)	**m**	**m**	(magnetic number)
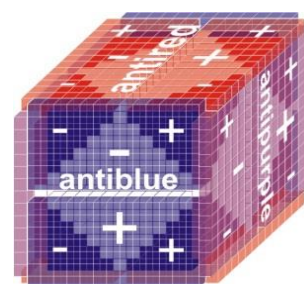
Pattern State Number Values

Values for the four Pattern state numbers are assigned on a purely spatial basis. The values for Pattern number **s** would therefore, be different (inverse) from the values of quantum number **l** because **s** increases from the middle of the code cube outward.

Values for c

+**r** / -**r** = red plate
+**r̄** / -**r̄** = antired plate
+**p** / -**p** = purple plate
+**p̄** / -**p̄** = antipurple plate
+**b** / -**b** = blueplate
+**b̄** / -**b̄** = antiblue plate

Values for n, s, m

n = -7, …, -1, 0, +1, …, +7
s = -7, …, -1, 0, +1, …, +7
m = -7, …., -1, 0, +1, …, +7
No sign implies + or -

Phenomena Represented by the Pattern State Numbers

As shown on the right, the Pattern state number **n** represents energy levels, **s** represents electricity and **m** represents magnetism.

The Pattern state number **c** identifies one of six colours. It serves as a fourth space dimension indicator and is equivalent to a rotation in time.

The bb-module itself represents the open gravity signature sequence. The same sequence could apply to the charge of electrons, for example.
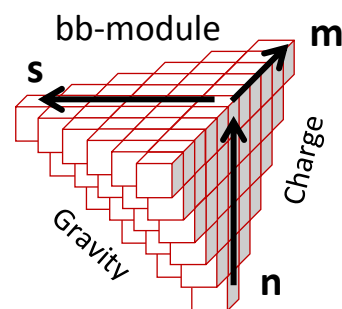
Example of a Genetic State's PSIs

Genetic states are virtual cells with three overlapping PSIs. The three PSIs of the CAG genetic state (in a cube cover vertex) are:

C =	**[r̄, +7, +7, -7]**	(r̄ represents antired)
A =	**[p̄, +7, -7, +7]**	(p̄ represents antipurple)
G =	**[b̄, +7, -7, +7]**	(b̄ represents antiblue)
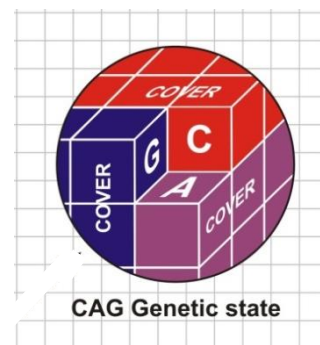
The code cube is a crystal measuring 15 by 15 by 15 cells

The Code Cube Levels

The code cube represents the highest level of the cosmos code. In the next (lower) level each cell of the code cube consists of a copy of the complete code cube. Only the module type of which the cell is a member is, however, 'active' in the lower level. 'Active' means to be in a similar state as the switched-on state of genes of the genome in cells of a specific bodily organ. (Totipotent implies that all genes in a cell are active and pluripotent implies that only certain genes in a cell are active.)

For example, only the bb-cells inside a cell of a bb-module will be active. A cell in the next lower level will also have only the bb-modules active. The resulting multi-level cube structure will be a fractal structure.
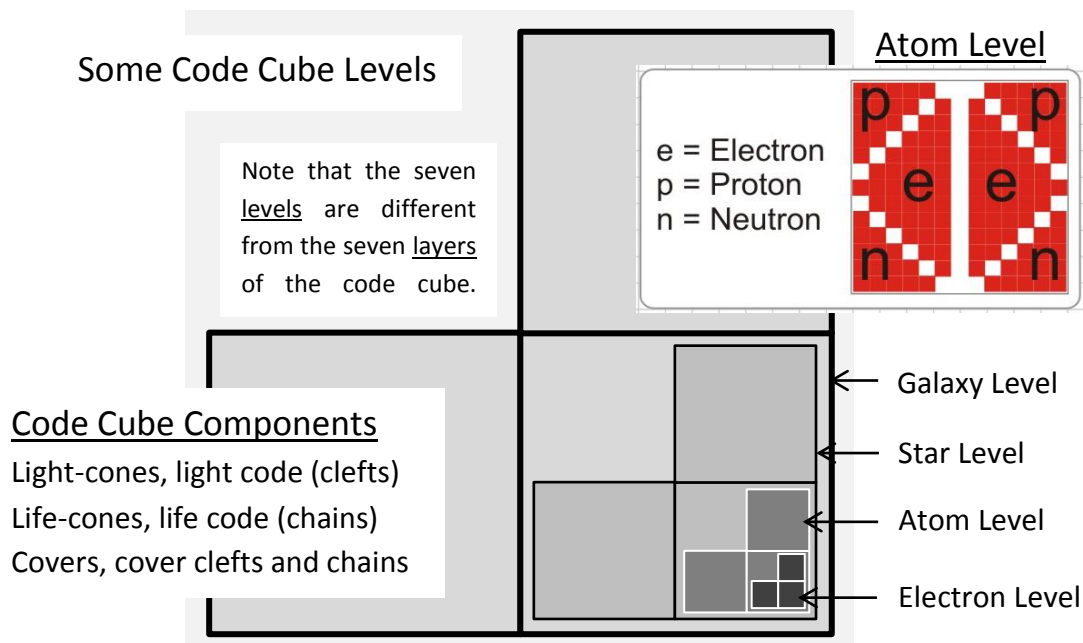
The Seven Code Cube Levels

The code cube is the top level of the cosmos hierarchy. The six lower levels are indicated by their respective PSIs as shown on the right.

A level is indicated by a digit (with a sign) in front of the square brackets that denote a Pattern State Identity.)

Cosmos level	**[c, n, s, m]**
Galaxy level	-1 **[c, n, s, m]**
Star level	-2 **[c, n, s, m]**
Planet level	-3 **[c, n, s, m]**
Crystal level	-4 **[c, n, s, m]**
Atom level	-5 **[c, n, s, m]**
Electron level	-6 **[c, n, s, m]**

Some of the code cube levels are shown diagrammatically below. (The module used for illustration is not a code cube type module. It is an asymmetric fractal-type structure similar to a Menger cube.)

Some Code Cube Levels

Note that the seven levels are different from the seven layers of the code cube.

Atom Level

e = Electron
p = Proton
n = Neutron

Code Cube Components
Light-cones, light code (clefts)
Life-cones, life code (chains)
Covers, cover clefts and chains

Galaxy Level
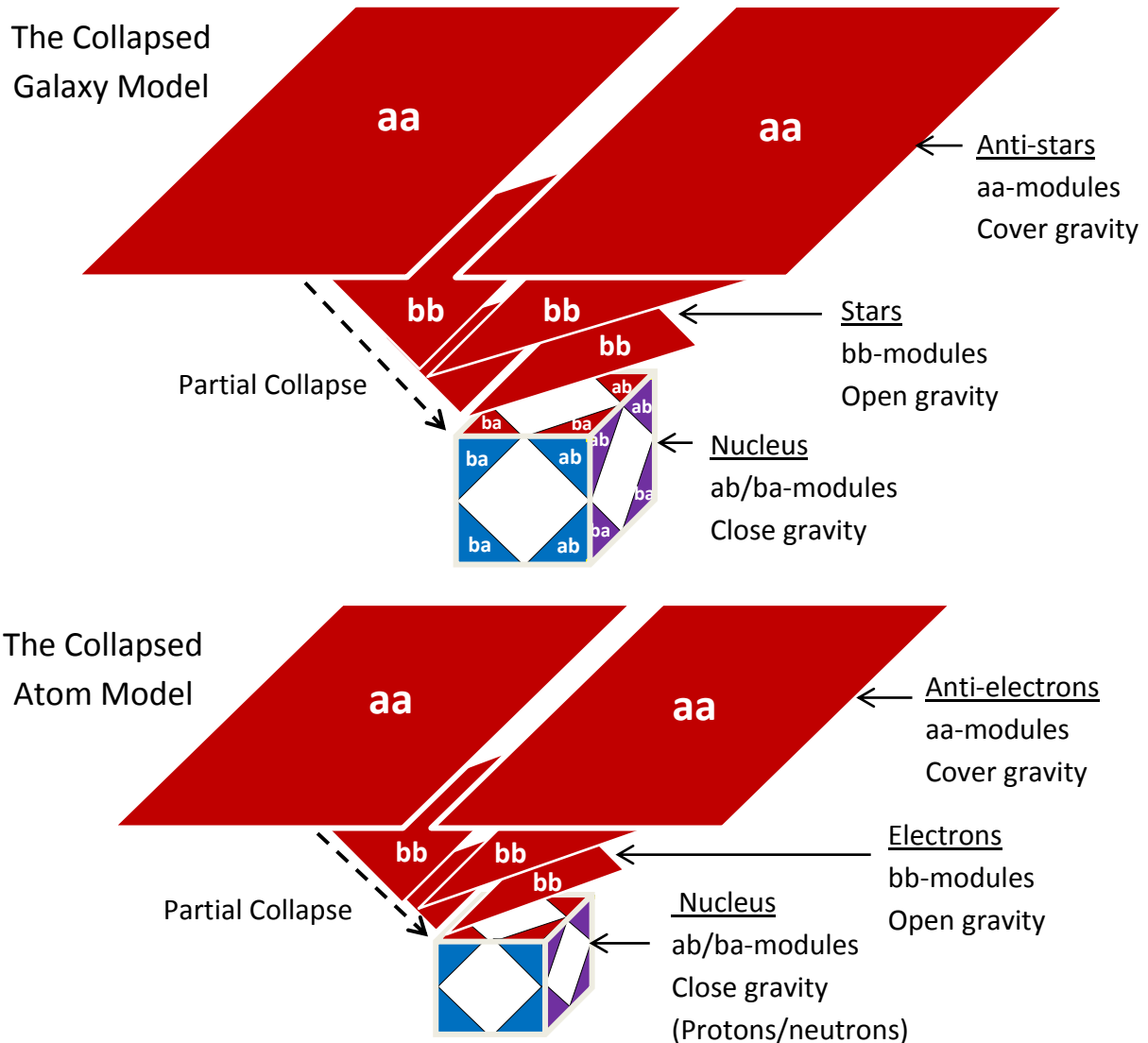Star Level
Atom Level
Electron Level

The Cosmic Chromosome

The highest level of the life code (the chains of the code cube) could be taken as a body, say of mankind. The next level is chromosomes, genes the next and codons the lowest. The complete cosmic chromosome (pair) will, however, also have seven levels such as the cosmos code above. The segments of The Pattern Cell (see P05:10) could be made to match the seven levels of the cosmic chromosome.

Life Code Levels	PSI
Body	**[c, n, s, m]**
Chromosome	-1 **[c, n, s, m]**
Gene	-2 **[c, n, s, m]**
Codon	-3 **[c, n, s, m]**

The core of the cube is the origin of the code.

The Collapsed Cube

In *The Encoded Earth* book it is argued that the whole original, duonity creation as represented by the code cube had collapsed in what could be called a general collapse. A partial collapse scenario is, however, also a possibility. The drawings below illustrate a macro view (the galaxy model) and a micro view (the atom model) of a partial collapse. (Only one of the six cover pairs is shown.)

The Collapsed Galaxy Model

Anti-stars
aa-modules
Cover gravity

Stars
bb-modules
Open gravity

Nucleus
ab/ba-modules
Close gravity

Partial Collapse

The Collapsed Atom Model

Anti-electrons
aa-modules
Cover gravity

Electrons
bb-modules
Open gravity

Nucleus
ab/ba-modules
Close gravity
(Protons/neutrons)

Partial Collapse

The partial collapse of the code cube saw the ab/ba-modules shrink extremely little relative to the bb-modules. This is due to the effect of the close (gluon type) gravity of the ab/ba-modules.

The Collapsing Cosmos

> *'… (Einstein's) theory predicts: the universe is either contracting or expanding.'*   Carlo Rovelli

The partial collapse scenario that is illustrated above is essentially a nucleus forming collapse process. The ab/ba-modules of the code cube are shrinking under the strength of their own close gravity.

The complete collapse scenario implies the reversal of the compression of the aa-modules and the subsequent annihilation of the bb-modules by the 'anti-matter' aa-modules. The positively charged nuclei (ab/ba-modules) are no longer balanced by the negatively charged bb-modules and they disintegrate.

The collapsing cosmos is like a dying body.

The Cube is the Code

The code cube is an intricate and magnificent edifice – full of wisdom and perfect in beauty.

The code cube represents a geometric of number, structure, colour and coding as the cosmic Pattern, Foundation, Light and Life.
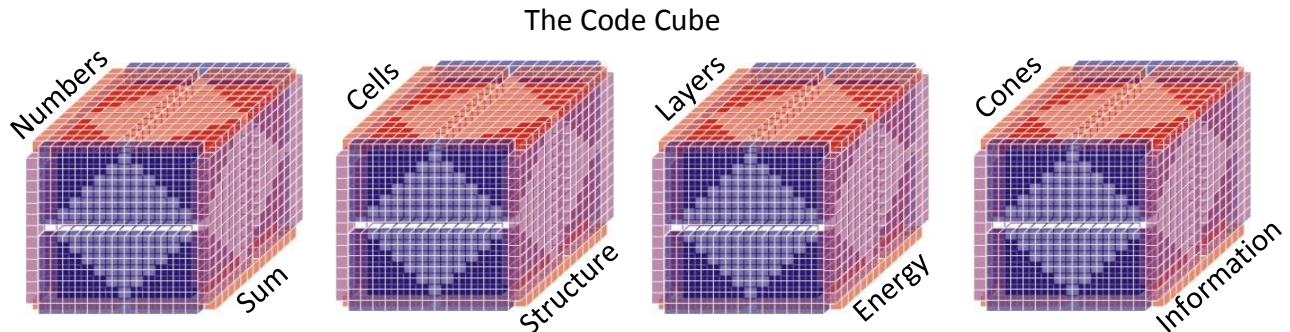
The Code Cube

'It from Bit'

It is shown in P06:2 that the Shannon information is a special case of the Pattern information. The Shannon information in the Pattern context is defined as Pattern number 1 (pn1). The Pattern number that yields the code cube is the cubed pn6 pair (see Folder 3). A cubed pn1 pair yields a structure composed of 16 cells plus 4 virtual cells whereas the cubed pn6 pair yields the code cube that consist of 3024 cells plus 351 virtual cells.

The Pattern number system manifests an intimate relationship between number and structure. It could perhaps be what the famous physicist John Archibald Wheeler had in mind when he coined his *'It from bit'* phrase. With this expression he tried to convey the idea that information was the origin of everything.

Gravity and Charge

Both gravity and charge adhere to the same inverse square law (Newton's law and Coulomb's law). This implies that charge exhibits the same quadratic sequence as gravity. Charge is therefore equivalent to open gravity except that gravity is always attractive, while charge can be attractive or repulsive. By analogy, there could be other types of charge that are equivalent to close gravity and to cover gravity.

It, therefore, seems as if gravity and charge are essentially the same phenomenon; it only manifests as charge in the lower levels and as gravity in the higher levels of the code cube (see P06:10).

QuantumGravity

The code cube represents a quantum spacetime. The code cube structure (cells) reveals the quantum-ness and also the innate gravity structure (the quadratic sequences of the Light-cones and Life-cones) of spacetime. The code cube could, therefore, be a representation of quantum gravity.

The spacetime duonity (special relativity) of Einstein was the precursor to his spacetimegravity duonity (general relativity). Now general relativity seems to be the precursor to a quantumgravity duonity.

LightLife

The layers of the code cube represent transitions (energy) and the cones represent combinations (information). Energy and information are all there is. The code cube, therefore, embodies all that is necessary to compose and conduct the most glorious cosmic love song - a duet called LightLife.

"In the beginning was the Word . . . In him was life, and that life was the light of men."   John 1:1,4