# Appendix A - Glossary of terms

***angular velocities of rotation*** The rotation of the proton's 'H' or 'S' face 2D membranes in radians per second.

***angular velocity ratio*** The difference between 'H' and 'S' face membrane rotational values.

***apparent mass conversion*** The apparent loss of three-dimensional mass through a 'phase-change' to higher or lower dimensional energy.

***area of influence*** The component of an 'H' or 'S' face that is responsible for an interaction with a boundary chord.

***attenuation*** The condensation of dimensional boundary surface wave energy to three-dimensional mass.

***attractive component*** The compressive or 'inwardly' propagating component of a high-energy dimensional boundary surface wave.

***axis coordinate*** An abstract line drawn between two opposing faces of a tetrakaidecahedron that represents its constant motion axis.

***big-ping*** The drop of three-dimensional whole surviving teddies and independent boundary chords into what would become our own 3D/4D space.

***big-ping density*** The initial density of the embryonic universe at the moment of the big-ping based on a current baryon number of $10^{80}$.

***big-snap*** The separation of whole surviving teddies and independent boundary chords from their eighth-dimensional teddy-lattice.

***body-centred crystal lattice*** One of the basic crystal forms; one of the fourteen 'Bravais' lattices.

***boundary (3D/4D)*** The abstract surface that would lie between the dimensional energy levels defining three and four dimensional space.

***boundary (4D/5D)*** The abstract surface between four and five dimensional space.

***boundary chord mass*** The three-dimensional mass equivalence of the teddy's or the IDBC's boundary chord in four-dimensional space.

***boundary chord mass capacity*** The maximum mass of each of the whole surviving teddy's original boundary chords.

***boundary chord value*** The specific number of boundary chords located around a particular face.

***boundary chord volume*** The three-dimensional volume occupied by a boundary chord determined by the 'HSH' area rule.

***boundary chords*** The secondary condensation or reduction of 8D energy within the 8D-lattice to three-dimensional material; formed at the 'H' and 'S' tri-planar coordinates.

***boundary membrane*** The formation of two-dimensional membranes within the faces of the tetrakaidecahedron by the de-gassing energies of boundary chord material.

***boundary chord model*** The conviction that the nucleus is composed of seven rotational groups that are in turn, comprised of dimensional boundary chords that are the result of dimensional differentiation in an earlier evolutionary stage of a young, embryonic universe.

***boundary surface*** Any surface that lies between two dissimilar dimensional energy levels.

***broken teddies*** The possibility of 'segments' created by violent proton to proton collisions.

***bubbles*** Four-dimensional expansion events originally joined by single-dimensional vectors.

***build-unit*** A viable number of 8D teddy volumes that would form a separation unit during the big-snap.

***caging effect*** The possible capture of a neutron during combination of proton/neutron groups when in their flipped polarity state during nucleosynthesis.

***captured electron mass*** One of two resultant boundary chord masses that may be captured by the proton's E-shell. They would not originally

possess a charge.

***cellular lattice*** The eight-dimensional structure of hexagonal and square membranes resulting from 4D-to-4D contact during the vacuum collapse.

***charge*** The result of 2D membrane rotation against 3D boundary chords.

***chord membranes*** De-gassed 2D or sub-3D material within the bounds of the teddy's 'H' and 'S' face boundary chords.

***chord resonance*** The vibration of boundary chords through an input of external energy.

***closed chords*** The configuration of the 'H' and 'S' face boundary chords within the neutron and proton.

***coaxial waveform*** A dimensional boundary surface wave with an expansive outer and compressive or attractive inner component of propagation. These will correspond to dim-waves at the 3D/4D and 4D/5D boundaries respectively.

***coigns*** The original corners on a cube.

***complimentary spin*** A spin phenomenon that occurs in the same direction about the axial rotation of a rotational group.

***compressive component*** The 'attractive' or 'inwardly' propagating component of a high-energy dimensional boundary surface wave.

***compressional momentum*** The 'force' exerted by the fifth-dimensional, which exactly balances the expansive force of the fourth.

***component of periodicity*** The circular boundary chord values of the 'H' and 'S' faces of the proton in terms of their possible Fourier analysis.

***constant motion axes*** The abstract lines drawn between opposing faces of the teddy and define the accelerated or constant motion of the boundary chords around any particular face.

***contraction*** The conservation of big-snap energy as the third and *(5D)* fifth dimensional levels differentiate. 5D contraction will balance the adjacent 4D expansion of the universe.

***cubic rule*** The numerical relationship between single, two and three-dimensional energy levels. Like the cube, each can be represented by the indices $10^1$, $10^2$ and $10^3$.

***crystal forms*** Basically the fourteen different configurations seen within the 'Bravais' lattice classification system.

***crystal system*** The seven main symmetry groups identified within crystallography. Also known as the essential axes of symmetry.

***dark energy*** The four-dimensional expansion of the universe that can be represented as a percentage by the total 'HSH' dimensional boundary string components from the 8D tri-planar coordinates.

***dark matter*** Represented in the dimensional boundary chord model by all the independent boundary chords and passive-photon material.

***de-gassing*** The condensation of dimensional boundary chord material to 2D membrane energy through decompression in 3D space.

***de-gassing value*** The single-dimensional value of the de-gassing process at any singular boundary chord or area of influence.

***dimensional boundary surface wave*** This model's definition of an electro-magnetic wave travelling through space. It is a transverse wave and as such, it must travel the boundary between two dissimilar media.

***dimensional boundary chord model*** The conviction that the nucleus is composed of seven rotational groups that are in turn, comprised of dimensional boundary chords that are the result of a dimensional differentiation that occurred within in an earlier evolutionary stage of a young, embryonic universe.

***dimensional condensation*** The phase change of dimensional energy from a higher to a lower dimensional energy level.

***dimensional differentiation*** The evolution and separation of dimensional energy levels into their present day hierarchy.

***dimensional energy*** The concept of a dimensional energy spectrum that would include a 3D level we define as matter.

***dim-wave*** A dimensional boundary surface wave.

***displaced time independence*** The fourth-dimensional definition of time that is detached and separated through differentiation from the time-independence of the boundary chords.

***dominant axis*** The axis that joins two bonded protons during their flipped polarity stage.

***doughnut*** A three-dimensional representation of the universe comprising a contractive and expansive component. The walls of the doughnut expand at the expense of the hole in the middle; that contracts to compensate.

***elastic rebound*** The catastrophic shortening of stretched out, open-ended independent boundary chords after the 8D big-snap.

***elastic tension*** The force that draws together adjacent expansion events (4D bubbles) as single dimensional strings are made to stretch prior to the vacuum collapse.

***electron-mass*** A reconfigured independent dimensional boundary chord remnant, still devoid of charge.

***electron shell*** A 4D+ dimensional energy bubble created by the proton's low energy expansive dim-waves.

***energy threshold*** The energy 'ground state' of a dimensional boundary chord with a specific level of resonance.

***energy depth*** The dimensional energy range of a proton's electron shell emission with low and high energy components.

***energy spike*** The disturbance on the 4D side of the 3D/4D boundary caused by the proton's electron shell.

***energy well*** The warping of the 3D side of the 3D/4D boundary caused by the proton's electron shell.

***entry point*** The theoretical origin of a single dimensional event within a null-universe scenario.

***episode of stretching*** The elongation of dimensional boundary chord material due to four-dimensional expansion in the 8D 'net-like' teddy-lattice.

***e-shell*** This model's abbreviation of the proton's dim-wave produced electron shell.

***essential axes of symmetry*** The axial configuration that determines the seven main groups within the crystal system.

***exotic segments*** Broken teddies. The possibility of remnant or combined teddy component dimensional boundary chords; or faces as a result of teddy to teddy collisions.

***expansional energy flow*** The flow of 4D expansion towards the energy-spikedisturbance at the 3D/4D boundary.

***face-spin bias*** The tendency of dimensional boundary chords to rotate around the circumference of their respective faces. Momentum carried over from the big-snap.

***face resonance*** The vibration in 'H' or 'S' face dimensional boundary chords, caused by the rotation of the 2D membranes within.

***field lines*** The configuration of dim-wave energy emission from a resonating dimensional boundary chord source.

***flipped-polarity*** The possibility of rotational groups to change their polarity due to an increase in rotational speed caused by an input of energy.

***grounding*** The tendency of the attractive or compressive component of high energy dim-waves to be absorbed at their opposite poles.

***H face*** One of eight originally hexagonal shaped faces that makes up the tetrakaidecahedron.

***H face dim-waves*** The high-energy bi-polar dim-waves emitted by 'H' face boundary chords because of 2D membrane rotation.

***half-chord interactions*** The value of the dimensional boundary chord interaction at the point of convergence upon a Stage 1 reconfigured teddy.

***hexagonal membranes*** The result of 4D-to-4D expansional surface contact within the 8D lattice after the vacuum collapse.

***hexagonal planes*** The 'H' components of the tri-planar coordinate from where the dimensional boundary chords originate as secondary condensation within the 8D teddy-lattice.

***hollow teddies*** The configuration of the tetrakaidecahedral lattice in the eighth-dimension prior to secondary condensation.

***holosymmetric class*** A defined class within the crystal system where any particular crystal comprises the most symmetry elements when compared to others of the same form.

***homogeneous expansion*** The resultant non-cellular expansional characteristics of the fourth-dimension after the vacuum collapse.

***HSH string value*** The individual components from the tri-planar area rule that determine the overall dimensional boundary chord volume.

***imposed inertia*** Dimensional boundary chord acceleration normal to the constant motion axes due to reconfiguration to circular faces.

***independent dimensional boundary chords (IDBCs)*** Dimensional boundary chords that did not make it as whole tetrakaidecahedra after the big- snap and big-ping into what would become 3D/4D space. Abbreviated to IDBCs.

***individual mass value*** 'H' or 'S' face dimensional boundary chord values after the condensation and removal of their 2D component.

***integral dimensional levels*** The idea that our universe is constructed from a finite number of integral levels that have evolved through dimensional differentiation.

***intersection difference*** The separation of intersection points on a two-dimensional membrane area.

***intersection point*** The crossing (over or under) of single dimensional vectors forming a two-dimensional membrane area.

***intersection value*** The two-dimensional value formed at an intersection point by two, single-dimensional vectors.

***knots (4D)*** A three-dimensional analogy used to describe the relationship between 1D, 2D and 4D interactions.

***ladder of dimensional hierarchy*** The evolutionary stages and dimensional energy characteristics of the universe as a whole, with its dimensional levels represented by the rungs of a ladder.

***linear speed*** The relative speed of a specific point located at the circumference of an 'H' or 'S' face circular dimensional boundary chord.

***locked-in dimensional boundary chords*** The thirty-six dimensional boundary chord values that make up the whole surviving teddies after the big-ping and within our own protons and neutrons.

***loop areas*** An analogy for 2D membrane areas made from single-dimensional strings.

***loop variable operation*** The evolution of a continuous single-dimensional vector into two-dimensional membranes.

***loop variables*** The concept of 'loop dependent traces' and a ‘uniform spreading of weaves' to produce 2D enclosed areas.

***loops (2D)*** The forerunners of 2D membranes.

***magnetic poles*** The opposite faces of 'H' face rotational pairs within the body of the teddy proton.

***mass (1e)*** The 'S' component route to IDBC reduction.

***mass (2e)*** The 'H' component route to IDBC reduction.

***mass conversion factor*** The conversion of 3D

mass values to a higher (4D) or lower (1D or 2D) mass equivalents using the cubic rule or the 3D/4D mass equivalence expression.

***mass deficit*** The three-dimensional mass equivalence of the difference in the (background) 4D energy level and the 4D+ energy level of the volume enclosed by the proton's dim-wave produced electron shell.

***mass equivalence*** The conversion of a 1D, 2D or 4D value to a corresponding three-dimensional mass.

***membrane capacity (2D)*** The total three-dimensional mass equivalent of an 'H' or 'S' face 2D membrane.

***membrane convexity*** The resultant shape of 2D membranes due to their rotation, the centrifugal effect and field interactions.

***membranes*** Any value with just a two-dimensional area.

***membrane energy*** The translation of single-dimensional energy into two-dimensional equivalents.

***membrane rupture event*** The explosive reduction of 8D membrane material to 3D dimensional boundary chord 'H' and 'S' string components.

***membrane values*** The evolution of two-dimensional values within loop areas.

***mini big-bang events*** Four-dimensional spherical expansion events caused by a reduction to 'zero' intersection difference.

***missing mass rule*** The apparent loss of 3D mass due to 2D de-gassing or an increase to 4D expansion through an input of energy.

***modified area of influence*** A change in the number of 'areas of influence' caused by the coupling of two protons' 'S' faces.

***monopoles*** Theoretical magnets with either a north or a south pole, but not at the same time. 'S' face rotational groups within the ‘dimensional boundary chord model of the nucleus’ could be considered as smaller versions of these.

***multi-pole*** The characteristics of 'H' face dim-waves.

***neutron*** A Stage 1 reconfigured teddy.

***null-dimensional vacuum*** The pore spaces between the original 4D spherical expansion events.

***null-universe*** A universe that has yet to experience any kind of event.

***open chords*** The configuration of independent dimensional boundary chords.

***orbital or particle motion*** The phenomenon of particulate orbital movement at or close to the boundary during dim-wave propagation.

***orthogonal*** The orientation of faces that results in one being opposite to its partner at the other end of their shared axis (normal to both faces).

***passive photon*** The result of dim-wave attenuation, producing a tiny three-dimensional mass that has yet to gain momentum in order to produce a detectable 'photon' of light.

***permittivity of free space*** The ratio of electric displacement in a particular medium - to the electric field intensity producing it.

***piston effect*** The relationship between expansion and compression.

***points ofconvergence*** The position on a teddy where dimensional boundary chord mass values can be calculated.

***polarity-flip*** The reversal of north and south poles on ‘S’ and ‘H’ face rotational groups.

***pore spaces*** The free space between the surfaces of spheres.

***pore space vacuums*** The null-universe space making up the pore spaces between early 4D expansion events.

***propagation (4D)*** The outward expansive movement of dim-waves.

***propagation (5D)*** The inward attractive movement of dim-waves.

***proportional compressive attraction*** The contractive force exerted by the fifth-dimension on a body's energy-spike as it penetrates the 4D/5D boundary. Attraction will be dependent on the depth of penetration and thus mass.

***proto-deuterium*** A deuterium nucleus in its flipped-polarity state, prior to the evolution of its electron shell.

***proto-hydrogen*** Hydrogen prior to the capture of its electron mass.

***proton*** A Stage 2 reconfigured teddy.

***proton bubbles*** A proton's electron shell.

***pure tones*** A face's dimensional boundary chord in Fourier analysis.

***reef-knot analogy*** A way at looking at 4D expansion events and their relationship to single-dimensional string energies.

***re-gassing*** The reversion of 2D membrane energy back to three-dimensional mass due to an input of energy.

***remnant boundary chord mass*** The 'H' or 'S' route result of an independent boundary chord shaking itself to pieces.

***reduction*** The condensation of a single-dimensional string entity from the 'foamy' homogeneous consistency of the original (1D) event energy.

***residual energy differential*** The difference between an energy-well and the captured 3D electron mass.

***residual energy gradient*** The resultant remaining attractive force of an energy-well after electron mass capture.

***residual mass deficit*** The three-dimensional mass equivalent of an energy-well after electron mass capture.

***retraction*** The 'using-up' of single-dimensional string energy by 4D expansional bubbles that draws neighbouring events closer together.

***rotational conformity*** The pairing up of faces on the whole surviving teddy, to produce a rotational group with complimentary rotation about their mutual axis.

***rotational groups*** The opposing 'H' and 'S' faced pairs on the proton where 2D membranes rotate because of their imposed face-spin bias.

***runaway rebound*** The conversion of IDBC mass to dim-wave energy.

***S bonds*** The bi-polar effects of flipped, 'S' face rotational groups, producing a total of three possible bond axes (S1, S2, and S3).

***S face*** One of the six smaller faces on the teddy.

***S face dim-waves*** The low energy expansive dim-waves produced by the resonance of 'S' face boundary chords.

***savory index*** The ‘signature angular velocity of rotation' index, or the relationship between 'H' and 'S' face 2D membrane rotational speeds (in $\pi$).

***scalar (4D) characteristics*** The expansion of the usual three dimensions of length, width and breadth due to scale.

***scalar expansion*** Four-dimensional expansion.

***scale*** The component of 4D expansion.

***secondary condensate*** The condensation of 8D membrane energies to form connected string components from their tri-planar coordinates; producing 3D energies.

***simple dimensionality*** The concept that a universe is comprised of a finite number of dimensional levels that does not include ‘curled-up' hidden ones, at or near the Planck scale.

***single dimensional shrinkage*** The absorption of single-dimensional string energies by 2D membranes and later 4D spherical expansion events, producing quantum-sized $1^{st}$ and $2^{nd}$ dimensions.

***spherical wave-front*** The outward propagation of expansive dimensional boundary surface wave energy.

***spin*** The rotation of 2D membranes against dimensional boundary chords within the faces of the teddy (and proton).

***spin-conflict*** The different rotational tendencies in face-spin bias where spin direction can clash.

***spin ratio*** The ratio 'H' face to 'S' face membrane areas.

***square membranes*** 2D or 8D membranes formed at the teddy's 'S' faces. 8D versions are square; the proton's are now circular.

***square planes*** The original square planes of the tetrakaidecahedron.

***stage 1 reconfiguration*** The initial apparent mass loss from the teddy that results in the neutron.

***stage 2 reconfiguration*** The secondary de-gassing of 2D membrane energy (on the neutron) that results in the proton.

***strings*** Single dimensional vectors or dimensional boundary chord components.

***string energy*** Single-dimensional vectors absorbed during the evolution of 2D membranes and 4D spherical expansion events. Also a measure of 4D expansion.

***string memory*** The ability of an original single-dimensional string to reduce from single dimensional energy because of an integral longitudinal wave motion.

***string value*** 'H' or 'S' string value inherited from the secondary 8D membranes from whence they came, prior to their reduction.

***teddies*** Friendly abbreviation of the tetra-kaidecahedra.

***teddy-lattice*** The eight-dimensional result of 4D-to-4D collisions.

***teddy volumes*** The volume contained within adjoined hexagonal and square membranes that make up the 8D lattice.

***tetrakaidecahedron*** 14-sided three-dimensional polyhedrons with eight hexagonal and six square faces.

***time independence*** The result of the big-snap where single dimensional strings or vectors become separate entities and thus separate time-spans instead of comprising one, single, continuous vector of time.

***torus model*** A 4D expansional universe with a 5D compressive component; a doughnut.

***translational unit*** A Weaire & Phelan combination of tetrakaidecahedra and dodeca-hedra, that can produce as near to the perfect 'cubic' form of packing as is possible.

***trapped 4D space*** The 4D+ volume produced by the two components of the proton's expansive dim-wave emissions.

***tri-lateral chord separation*** The separation of the original teddy's points of convergence during Stage 1 reconfiguration.

***tri-lateral separation point*** The original corners on the whole surviving teddy where three dimensional boundary chords meet.

***tri-planar areas rule*** The geometry governing the 'H' and 'S' membranes and thus the dimensional boundary chord value.

***tri-planar coordinate*** The source of the boundary chords within the eight-dimensional teddy lattice.

***vacuum collapse*** The reconfiguration of four-dimensional spherical expansion.

***volumetric ratio*** The ratio of matter; dark matter and dark energy.

***VAMP*** The eight-dimensional relationship between volume *(v)*, area *(a)*, mass *(m)* and density *(p)*, where *VAMP=1*.

***wave condensation*** Attenuation of dim-wave energy.

***whole surviving teddies*** The thirty-six chorded tetrakaidecahedra that survived the big-ping into 3D space.

***zone of tolerance*** The range of the change of rotation with which a spinorial object will flip its polarity; which seems to occupy a small band either side of the usual $2\pi$ boundary.