Why all bodies fall to Earth at the same Acceleration and Speed

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Abstract: Galileo's experiments suggest that all bodies fall to Earth under the influence of gravity at the same speed, irrespective of size or weight, but Isaac Newton's equations appear to contradict this:

equation 1. $F = G\dfrac{m1 \times M2}{d^2}$ G is the Gravitational Constant
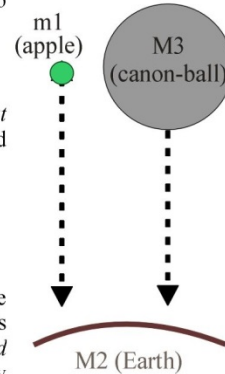
d is the distance, in metres, between m1 and M2

This recognises that the force [F] of gravity between m1 (an apple) and M2 (the Earth) *must* change if the size [mass] of m1 [the apple] changes; for example if the apple (m1) is replaced with a canon-ball (M3) then F *must* increase, otherwise Newton's equation 1 is wrong.

Moreover, in Newtonian mechanics:

equation 2.   Force (F) = mass (M) x acceleration (A), and, therefore;

Acceleration = F/M

which means that if the gravitational Force increases then acceleration *must* increase, and, hence the speed of a falling body *must* increase; which means that the speed of a falling body depends [according to Newton] on its mass—which in turn means that bodies of different masses *should* fall at different speeds? To understand why heavier bodies do not fall more quickly we firstly need to understand how gravity works:

m1 (apple)   M3 (canon-ball)

M2 (Earth)

How Gravity Works—a Unified Field Theory

The hydrogen atom [and helium atom] generate helically polarized electromagnetic radiation (gravity radiation) from polar regions that bombards neighbouring atoms drawing them towards the source of the radiation. Gravity radiation then causes the nucleus of the neighbouring atom to spin axially (the 'motor effect') and, at the same time, synchronizes the spin of the electrons in both atoms. The neighbouring atom then, in turn, generates helically polarized electromagnetic energy (the 'generator effect'). Both atoms spin axially in the same direction. Hence, the gravitational forces from both atoms pull in the same direction and the forces are additive. The gravitational Constant G is shown to be the instantaneous alternating magnetic force between any two electron-magnets in neighbouring atoms and, hence, the gravitational force F is proportional to G x m1 x M2 (where m1 and M2 represent the electron count of neighbouring atoms).

[A summary of How Gravity Works appears on the next page]:

electricity gravity and magnetism

G R A

T I M

three sides of the same coin

Why all bodies fall at the same acceleration and speed

Conclusion: As a falling atom [or m1] approaches the source of the gravity waves [the Earth, or M2], the relative frequency of the gravity waves passing through m1 increases, resulting in an increasing force of attraction [as predicted by Newton's 'equation 1']—but only up to a point, beyond which the increasing *centrifugal force* on the electrons prevents the electrons from following the synchronizing spin of the gravity waves; then, the gravitational force, from M2 upon m1, will cease. Thus, centrifugal force creates negative feedback, resulting in an 'automatic brake' on any increase in the falling-speed of m1 towards M2—i.e. every atom accelerates to a speed of 32 feet per second [after Galileo], at which point orbiting electron-magnets fail to respond to gravity waves: Consider two objects m1 and M3 falling towards M2 [Earth]. When released, both objects will accelerate. But M3, the heavier object (with more mass), will reach 32 feet per second *before* m1. So the 'gravitational brake' will be applied to M3 *before* m1. M3 thus becomes weightless, momentarily, allowing m1 to catch-up. Then m1 and M3 begin to accelerate again, together, from the same new position. The alternating magnetic waves from M2 switch on and off 1,420,405,800 times every second [the hydrogen frequency], hence the 'automatic brake' activates 1,420,405,800 times every second. Hence, all objects fall at the same speed. This mechanism explains why and how spinning discs, and objects caught in a tornado, levitate.

How Gravity Works

How Hydrogen radiates gravity waves

1. 93% of atoms in the Universe are hydrogen atoms.

2. The coil-shaped hydrogen electron orbits the hydrogen proton:

3. *The cause of electron-spin*: As the coil-shaped electron slices through the electric field, between the proton and electron, a magnetic field is induced into the electron. The induced magnetic field then parries against the electric field, causing the electron to spin, vertically:
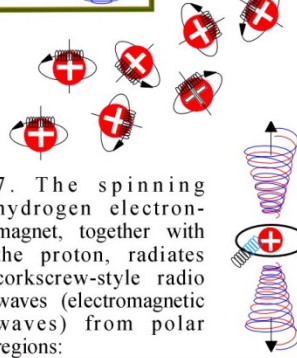
4. Electrons [electron-magnets] are electric for only half of the time:

5. Electrons [electron-magnets] are magnetic for only half of the time :

N S
or
S N

Note: The electron is shown *cylindrical* to facilitate explanation—it need not be—it could be round; *spherically-coil-shaped*.
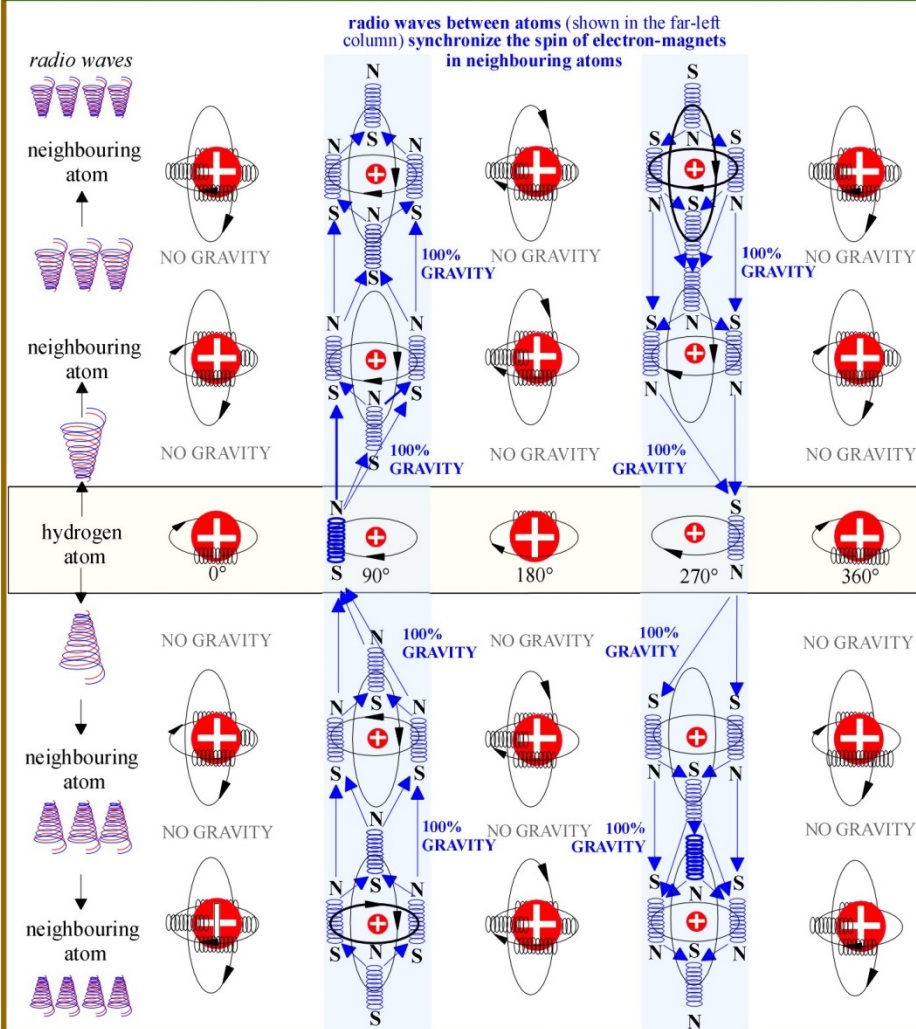
6. Hydrogen atoms point in different directions randomly:

7. The spinning hydrogen electron-magnet, together with the proton, radiates corkscrew-style radio waves (electromagnetic waves) from polar regions:

8. More complex atoms (with more than 2 electron-magnets) do not *normally* 'spin' or radiate gravity waves (because the electron shells are offset by at least 45° degrees—meaning that orbiting electrons 'bunch together', causing complex atoms to 'tumble', not 'spin'). However, corkscrew-style radio waves from the hydrogen atom synchronize the spin of electron-magnets in neighbouring atoms, hence, electron-magnets in neighbouring atoms follow the spin of the hydrogen electron-magnet. The neighbouring atom then radiates corkscrew-style radio waves of its own that, in turn, synchronize the spin of *more* neighbouring atoms in alignment.

neighbouring atom

hydrogen

radio waves between atoms (shown in the far-left column) **synchronize the spin of electron-magnets in neighbouring atoms**

radio waves

neighbouring atom

NO GRAVITY

100% GRAVITY

NO GRAVITY

100% GRAVITY

NO GRAVITY

neighbouring atom

NO GRAVITY

100% GRAVITY

NO GRAVITY

100% GRAVITY

NO GRAVITY

hydrogen atom

0°   90°   180°   270°   360°

NO GRAVITY

100% GRAVITY

NO GRAVITY

100% GRAVITY

NO GRAVITY

neighbouring atom

NO GRAVITY

100% GRAVITY

NO GRAVITY

100% GRAVITY

NO GRAVITY

neighbouring atom

How Gravity Works

The hydrogen electron-magnet, and proton, radiate corkscrew-style electromagnetic waves that synchronize the spin of electron-magnets in neighbouring atoms. The force of gravity is the alternating magnetic force experienced between electron-magnets [in neighbouring atoms] when the orbital inclination of electron-magnets is not 0° to the orbital plane. There is no known way of measuring an alternating magnetic field, which explains why gravity cannot be measured.

figure 1.   1

How do corkscrew-style electromagnetic radio-waves affect other atoms?

Gravity requires that every atom attracts every other atom in every different direction. Hence, for a gravitational mechanism to be enabled by corkscrew-style radiating waves three conditions must be met: 1. All hydrogen atoms throughout the Universe must be randomly orientated. 2. Corkscrew-style radio-waves from a hydrogen atom must *not* interfere with corkscrew-style radio-waves from other hydrogen atoms, and 3. If corkscrew-style radio-waves from the hydrogen atom are the prime-mover in the gravitational mechanism then other [non-hydrogen] atoms *must* be affected [in some way *switched-on*] by the corkscrew-style radio waves from the hydrogen atom [in order to satisfy Newton's observations that bodies in alignment, like the Sun and Moon, pull in the same direction].
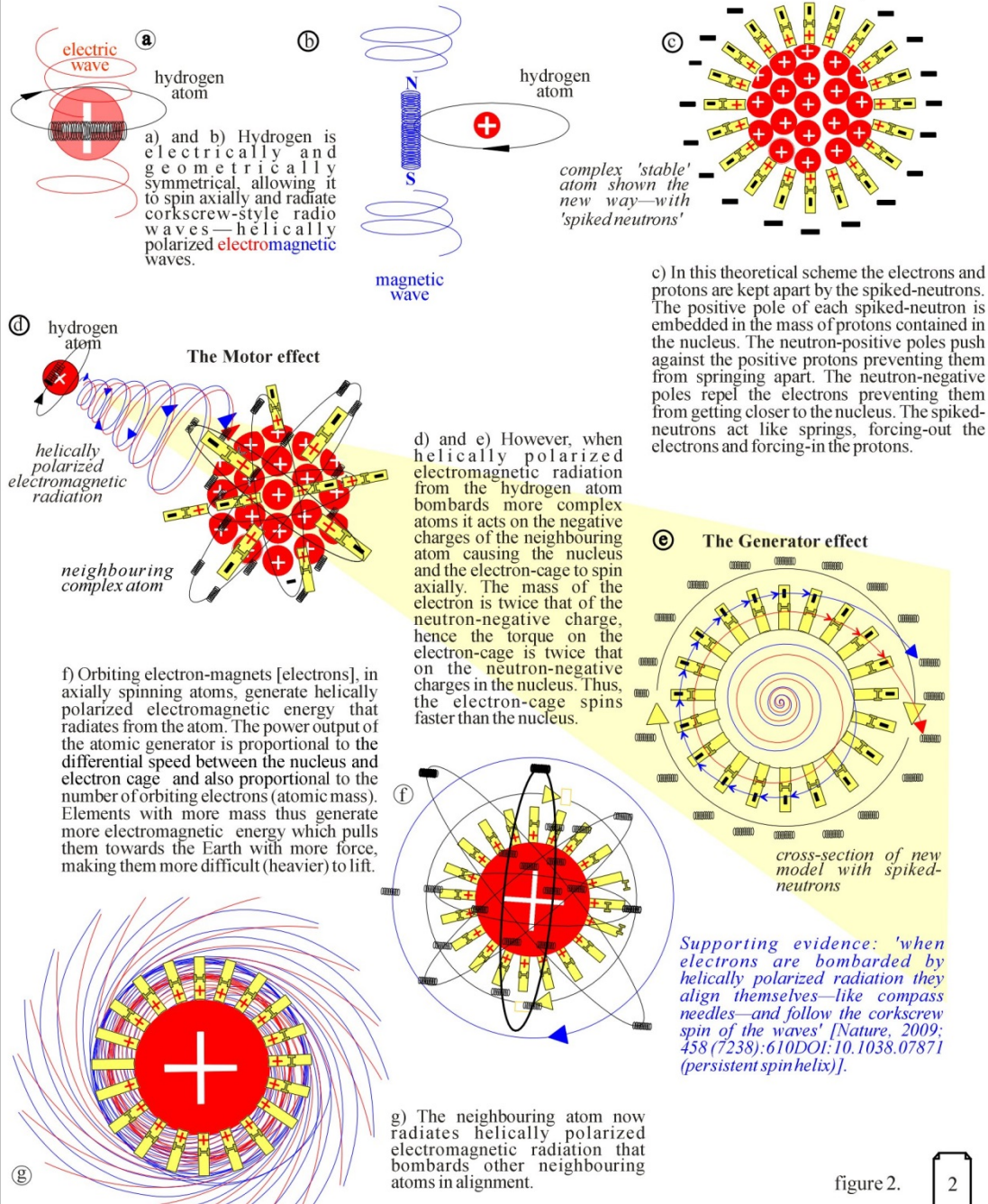
ⓐ electric wave — hydrogen atom

ⓑ N S magnetic wave — hydrogen atom

a) and b) Hydrogen is electrically and geometrically symmetrical, allowing it to spin axially and radiate corkscrew-style radio waves—helically polarized electromagnetic waves.

ⓒ complex 'stable' atom shown the new way—with 'spiked neutrons'

c) In this theoretical scheme the electrons and protons are kept apart by the spiked-neutrons. The positive pole of each spiked-neutron is embedded in the mass of protons contained in the nucleus. The neutron-positive poles push against the positive protons preventing them from springing apart. The neutron-negative poles repel the electrons preventing them from getting closer to the nucleus. The spiked-neutrons act like springs, forcing-out the electrons and forcing-in the protons.

ⓓ hydrogen atom — The Motor effect

helically polarized electromagnetic radiation

neighbouring complex atom

d) and e) However, when helically polarized electromagnetic radiation from the hydrogen atom bombards more complex atoms it acts on the negative charges of the neighbouring atom causing the nucleus and the electron-cage to spin axially. The mass of the electron is twice that of the neutron-negative charge, hence the torque on the electron-cage is twice that on the neutron-negative charges in the nucleus. Thus, the electron-cage spins faster than the nucleus.

ⓔ The Generator effect

cross-section of new model with spiked-neutrons

f) Orbiting electron-magnets [electrons], in axially spinning atoms, generate helically polarized electromagnetic energy that radiates from the atom. The power output of the atomic generator is proportional to the differential speed between the nucleus and electron cage and also proportional to the number of orbiting electrons (atomic mass). Elements with more mass thus generate more electromagnetic energy which pulls them towards the Earth with more force, making them more difficult (heavier) to lift.

ⓕ

Supporting evidence: 'when electrons are bombarded by helically polarized radiation they align themselves—like compass needles—and follow the corkscrew spin of the waves' [Nature, 2009; 458 (7238):610DOI:10.1038.07871 (persistent spin helix)].

ⓖ

g) The neighbouring atom now radiates helically polarized electromagnetic radiation that bombards other neighbouring atoms in alignment.

figure 2.

2

Why do falling objects *accelerate* to Earth?

m1
hydrogen atom
autonomous spin
(a)

heat and light
Power Supply Unit

M2

neighbouring atom
Induced spin
(b)

The Gravitational Constant [G]

a) The energy to sustain oscillations in the hydrogen atom is obtained from ambient heat. Ambient heat sucked-in by the proton causes changes in the amount of electric field [with the expansion and contraction of the proton] and changes to the magnetic field, caused by the toppling orbiting electron-magnet. G is the 'instantaneous alternating magnetic force between any two electron-magnets in neighbouring atoms'.
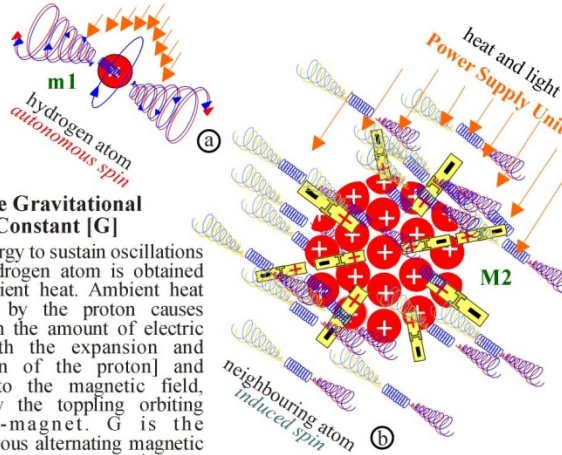
Derivation of Newton's equation

The magnetic force between any two magnets is proportional to the magnetic force of one magnet multiplied by the magnetic force of the second magnet. The magnetic force between two atoms can therefore be calculated by multiplying the electron-magnetic force of one electron-magnet [G, the gravitational Constant] by the number of electron-magnets in atom 1 (a proportion of the mass of atom 1, m1) multiplied by the number of electron-magnets in atom 2 (a proportion of the mass of atom 2, M2); or as Newton said, the force (F) can be calculated by multiplying G [the magnetic force of 1 electron-magnet] multiplied by m1 x M2. (c) – (e) explain why the result must be divided by the distance (between the two atoms) squared.

c) A theoretical atom radiating a theoretical gravity wave.

(c) ✗

d) A theoretical atom radiating a theoretical gravity wave, adjusted to accommodate Newton's observation that the force decreases in proportion to the distance travelled ((e), *below*).

(d) ✓

e) As theoretical gravity waves radiate from atoms they must decrease in field strength [per metre squared]. For every unit of distance traveled the radiated energy diverges geometrically and thus reduces by the square of the distance travelled (d²). Italicised numbers inside boxes show the field strength of the radiating electromagnetic energy, in volts per metre squared. [*Squares are used here to schematically illustrate the principle—the diverging wave is actually conically-helical, as in (d)*].

(e)

d^2 ✓

distance (metres)
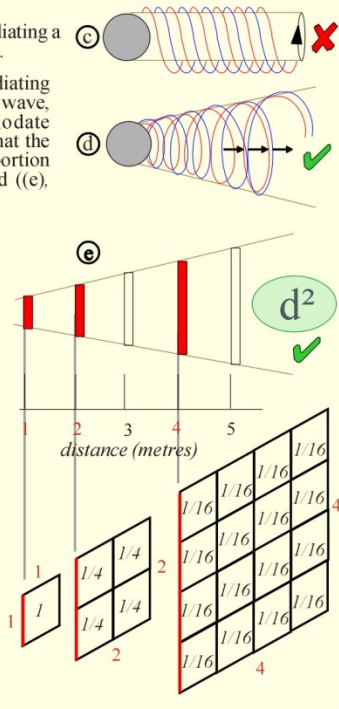
Why objects *accelerate* to Earth in proportion to d²

(f)

d^2

m1
falling body

F
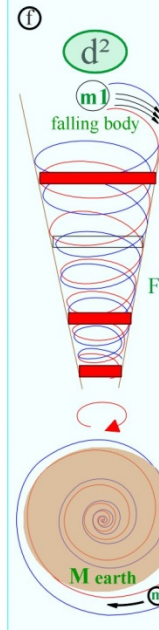
M earth

f) The frequency of the helically polarized EM radiation from the Earth remains constant. However, as m1 approaches M2 the spiraling EM radiation accelerates the differential rotation between each atomic nucleus and electron cage of which m1 is made. As a result the 'relative' atomic frequency increases and hence the output of the 'atomic generator' increases, increasing uniformly the attracting EM Force between m1 and M2 in accordance with a square-law scale as m1 proceeds along the EM spiral. M2 thus attracts m1 with square-law [d²] uniform acceleration.

[*m1 is shown spiralling towards M2 with the EM wave stationary but, in actuality, m approaches M in a straight line as the wave spirals across m1*]

Hence Isaac Newton's equation for the force of gravity; where the force is proportional to the masses (**m** & **M**) of the two attracting bodies and the strength of the force decreases inversely with the square of the distance between them (d²).

$$F = GmM/d^2$$

G is Newton's gravitational Constant
6.672×10^{11} N m² kg⁻²
—*the instantaneous alternating magnetic force between any two electron-magnets in neighbouring atoms*

figure 3.

3

Proof that the electron is a coil-shaped electron-magnet—and electron-shell architecture explained
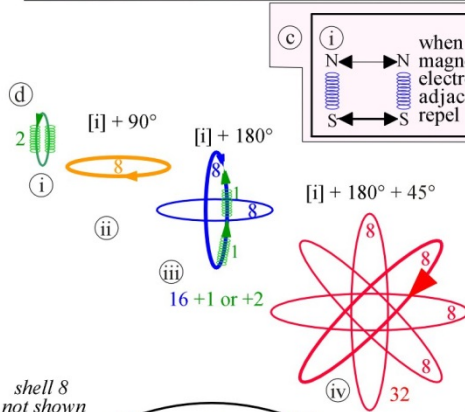
a) Schematic showing the theoretical maximum numbers of electrons filling the maximum number of available shells in an atom. The maximum number of electrons in the shell closest to the nucleus is 2. The maximum number of electrons in the next outermost shell/subshell is 8, followed by shells/subshells containing a maximum of 18, 32, 32, 18, 8, 2. It can be seen that, theoretically, the heaviest atom (illustrated) contains 120 electrons. The number of electrons orbiting an atom is usually balanced [but there are exceptions] with the same number of protons in the centre and (in our 'new atom') the same number of spiked-neutrons protruding from the centre (not shown). This also means that there are a maximum of only 120 different fundamental materials (elements). The heavier ones are more 'massive' and hence said to contain more *mass* (electrons, protons and neutrons).

(a)
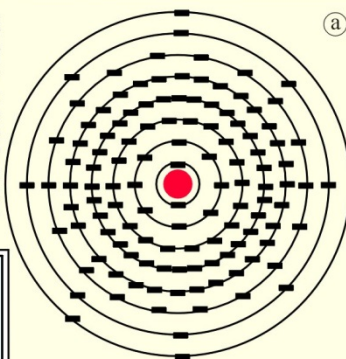
b(i – iv) illustrate the electric – magnetic tipping point of the orbiting electron-magnet [EM] at 45° intervals: bi) From 45° – 90° (1/8 of the time) the magnetic field of the EM rises [and it is more magnetic than electric]. bii) From 90° – 135° it falls [but is still more magnetic than electric]. b(iii – iv) The same thing happens between 225°– 270°, and from 270° – 315°, but with opposite magnetic polarity.

(b) (i) 0 – 90°   N / S | N / S 90 – 180° (ii) | (iii) 180 – 270° S / N | S / N 270 – 360° (iv)
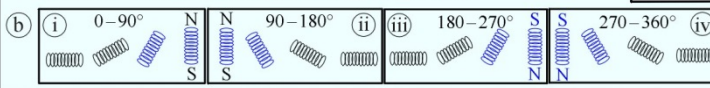
orthodox Science does not understand why the atom is structured the way it is—the reasons are given below

(c) (i) N ← → N, S ← → S when a N-S electron-magnet meets a N-S electron-magnet in an adjacent shell they repel

(ii) SN / NS when a S-N meets a N-S the two coalesce and the pair can no longer remain in the shell. Only atoms with a [maximum] sequence of 2.8.18.32.32.18.8.2 survive.

(d)

2 (i) [i] + 90°

8

[i] + 180° (ii)

8, 1, 1, 8

[i] + 180° + 45°

(iii) 16 +1 or +2

8, 8, 8, 8

(iv) 32

c(i – ii) when a northsouth [N-S] EM meets a northsouth [N-S] EM the two repel each other, and when a northsouth [N-S] meets a southnorth [S-N] the two attract, stick together, and exit the host shell. Hence, as subatomic particles accrete into atoms, EMs inside shells/sub-shells must be separated by at least 45° to avoid annihilation and EMs in one shell must be separated by at least 45° from those in adjacent shells. Hence the constraint of up to 8 EMs per shell/sub-shell [8 x 45° = 360] and the requirement for different shell/sub-shell planar orientations.

shell 8 not shown

(e)

d) and e) As a general rule orbital shells [or sub-shells of equidistant radii] cannot sustain more than 8 EMs because of considerations set down in b(i – iv) and, to avoid magnetic conflict *between* shells/subshells, the plane of successive shells/subshells must be progressively offset by at least 45°. However, shells 3 and 6 can sustain up to 2 more EMs in the scheme proposed in (d) and (e) because the magnetic moments from the 2 EMs in shell 1 (being equal and opposite to 2 EMs in shell 3) cancel, and magnetic moments from 2 EMs in shell 3 cancel those of 2 EMs in shell 6, allowing those shells/sub-shells to sustain up to 18, rather than 16, EMs.

here, (left) to further illustrate the relationship between magnetic moments, EMs in successive shells are shown reorientated; in shell 2 by 90°, in shell 3 by a further 90°, in shell 4, by a further 45°, in shell 5 by a further 90°, in shell 6 by a further 45° and in shell 7 by a further 90°. It can be seen that no magnetic conflicts occur in such a scheme and that the 2 EMs in shell 1 (green) influence the magnetic moments of those in shells 3 and 6, so that those shells can sustain up to 2 more EMs (green) than generally possible. This defined structure confirms that the electron must be coil-shaped and that it behaves as an electromagnetic particle

schematic only—EMs are actually synchronized by gravity waves and [instead] the inclination of each shell/sub-shell is progressively offset as shown in d(i – iv)

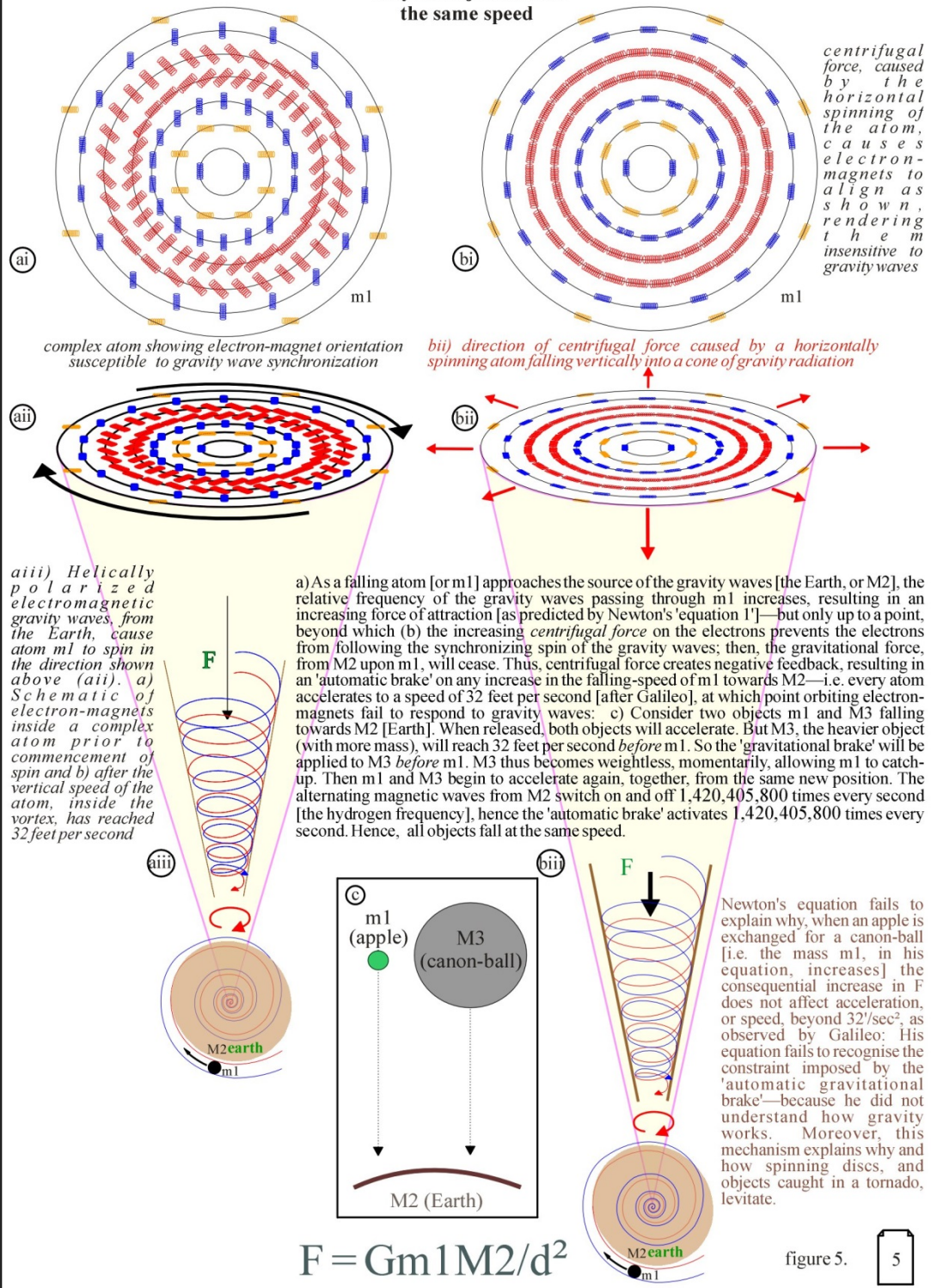figure 4.   4

Why all objects fall at the same speed

(ai) m1

(bi) m1

centrifugal force, caused by the horizontal spinning of the atom, causes electron-magnets to align as shown, rendering them insensitive to gravity waves

complex atom showing electron-magnet orientation susceptible to gravity wave synchronization

bii) direction of centrifugal force caused by a horizontally spinning atom falling vertically into a cone of gravity radiation

(aii)

(bii)

aiii) Helically polarized electromagnetic gravity waves, from the Earth, cause atom m1 to spin in the direction shown above (aii). a) Schematic of electron-magnets inside a complex atom prior to commencement of spin and b) after the vertical speed of the atom, inside the vortex, has reached 32 feet per second

(aiii)

F

M2 **earth**
m1

a) As a falling atom [or m1] approaches the source of the gravity waves [the Earth, or M2], the relative frequency of the gravity waves passing through m1 increases, resulting in an increasing force of attraction [as predicted by Newton's 'equation 1']—but only up to a point, beyond which (b) the increasing *centrifugal force* on the electrons prevents the electrons from following the synchronizing spin of the gravity waves; then, the gravitational force, from M2 upon m1, will cease. Thus, centrifugal force creates negative feedback, resulting in an 'automatic brake' on any increase in the falling-speed of m1 towards M2—i.e. every atom accelerates to a speed of 32 feet per second [after Galileo], at which point orbiting electron-magnets fail to respond to gravity waves: c) Consider two objects m1 and M3 falling towards M2 [Earth]. When released, both objects will accelerate. But M3, the heavier object (with more mass), will reach 32 feet per second *before* m1. So the 'gravitational brake' will be applied to M3 *before* m1. M3 thus becomes weightless, momentarily, allowing m1 to catch-up. Then m1 and M3 begin to accelerate again, together, from the same new position. The alternating magnetic waves from M2 switch on and off 1,420,405,800 times every second [the hydrogen frequency], hence the 'automatic brake' activates 1,420,405,800 times every second. Hence, all objects fall at the same speed.

(c)
m1 (apple)
M3 (canon-ball)

M2 (Earth)

(biii) F

M2 **earth**
m1

Newton's equation fails to explain why, when an apple is exchanged for a canon-ball [i.e. the mass m1, in his equation, increases] the consequential increase in F does not affect acceleration, or speed, beyond 32'/sec², as observed by Galileo: His equation fails to recognise the constraint imposed by the 'automatic gravitational brake'—because he did not understand how gravity works. Moreover, this mechanism explains why and how spinning discs, and objects caught in a tornado, levitate.

$$F = Gm1M2/d^2$$

figure 5.

5