Why Landers crash into Mars

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Observation: 10 out of 18 Mars-Landers (55%) have crash-landed into the surface of Mars.

Abstract: This Paper explains that Mars Landers crashed because their rate of descent towards the Martian surface was too fast. The excess speed arose due to a miscalculation of the gravitational force on the planet's surface. The miscalculation arose due to a misunderstanding of how gravity works.

Conclusion: The Gravitational Force—within the atmosphere of a spinning planet [Mars]—varies in proportion to its rate of axial spin, which affects the amount of centrifugal force exerted on a 'falling' spacecraft in two ways; i) Centrifugal force reduces the force of gravity on a planet's surface; the faster the axial spin the stronger the centrifugal force and the weaker the force of apparent Gravity on the surface of the planet and vice versa. ii) Hence, centrifugal force on a falling spacecraft affects the relationship between distance travelled and the 'gravitational brake' [which causes all bodies to fall at the same speed]. These two factors result in greater acceleration of the spacecraft beyond its designed limits [based on calculations made on the more quickly spinning Earth]. Neither of these adjustments are recognised in Newton's equation for the force of gravity upon which present-day calculations are based. Hence spacecraft designed 'optimally' will travel too fast and crash into planets that spin more slowly than the Earth.

From this it can be seen that the so-called gravitational 'constant' is not a universal constant [within the atmospheres of spinning planetary bodies] but dependent, in part, on the rate of axial spin and resulting centrifugal force experienced by the planet.

Contents

* previously published in *Why All Bodies fall at the same acceleration and speed*
** previously published in *How Gravity Works*

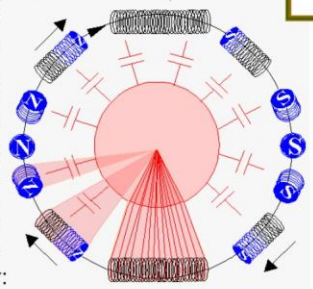
How Gravity Works

How Hydrogen radiates gravity waves

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

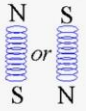
2. The coil-shaped hydrogen electron orbits the hydrogen proton:

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:

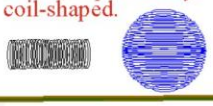


4. Electrons [electron-magnets] are electric for only half of the time:

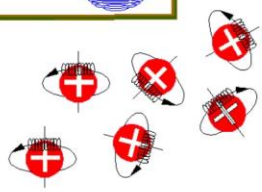
5. Electrons [electron-magnets] are magnetic for only half of the time :



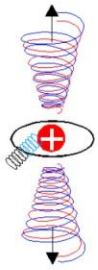
Note: The electron is shown *cylindrical* to facilitate explanation—it need not be—it could be round; *spherically*-coil-shaped.



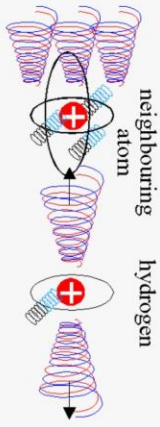
6. Hydrogen atoms point in different directions randomly:

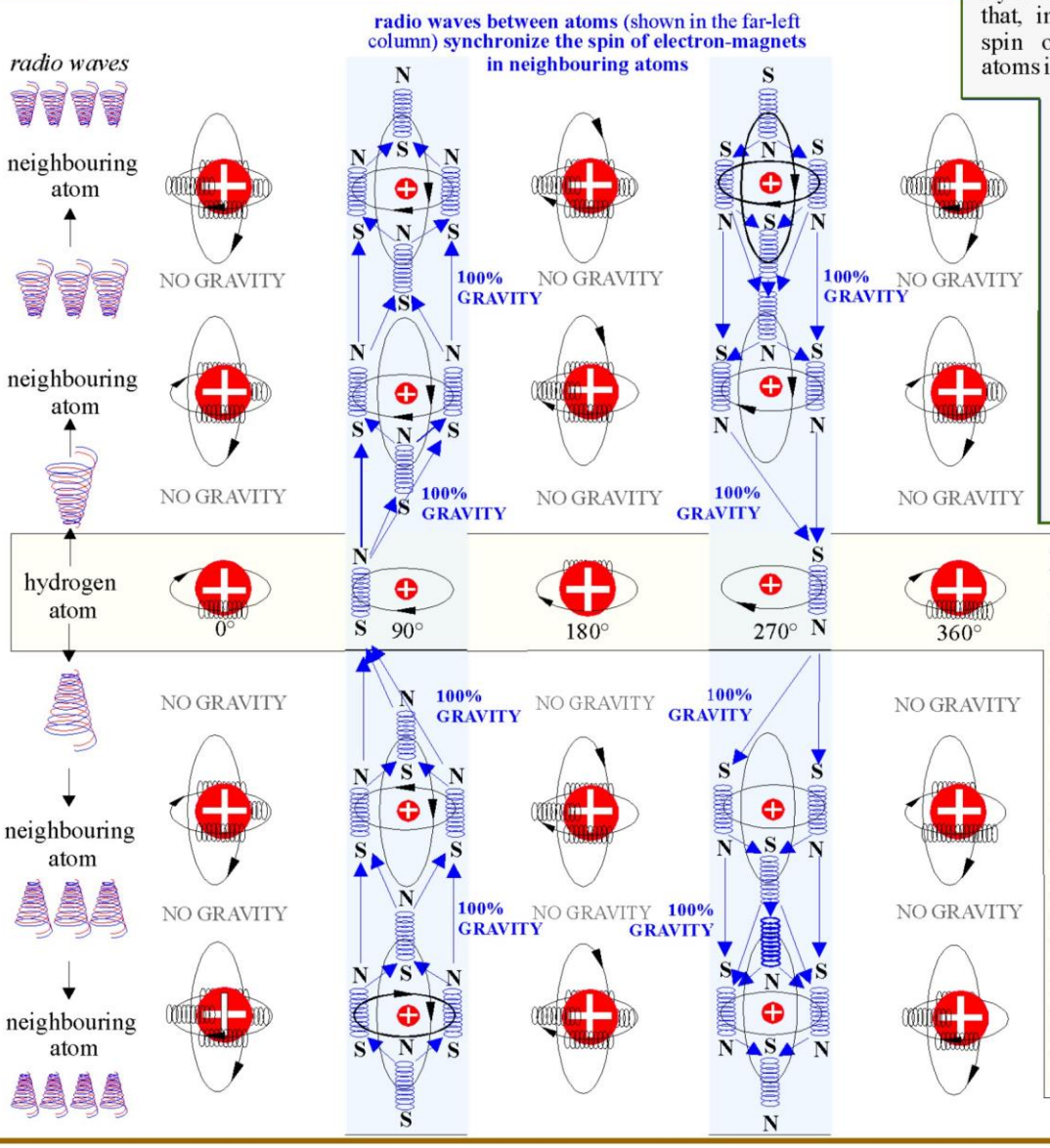


7. The spinning hydrogen electron-magnet, together with the proton, radiates corkscrew-style radio waves (electromagnetic waves) from polar regions:



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 cause the nucleus of the neighbouring atom to spin axially, and 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.





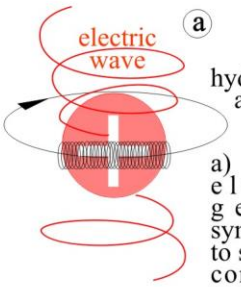
How Gravity Works

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.

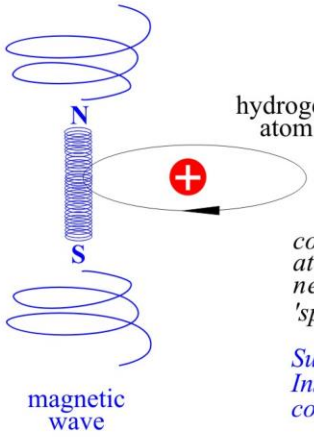
figure 1.

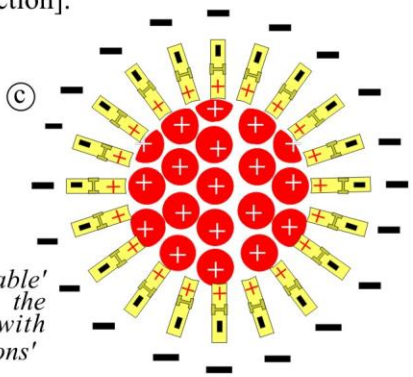
How do corkscrew-style electromagnetic radio-waves affect other atoms?

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].



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

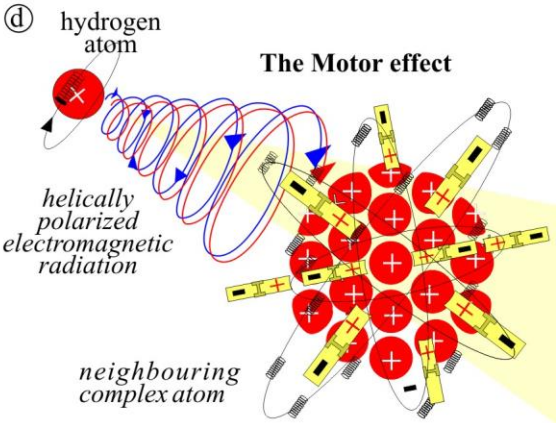




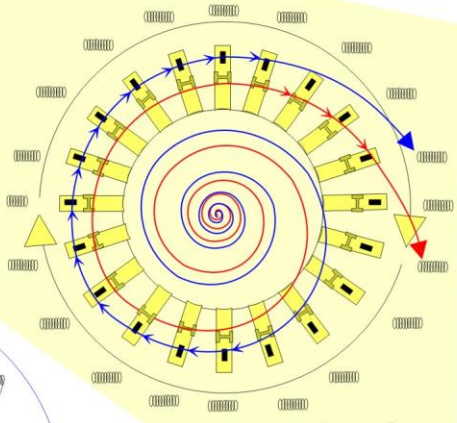
complex 'stable' atom shown the new way—with 'spiked neutrons'

Supporting evidence: Researchers, at the Hahn-Meitner Institute, Berlin, announced that 'neutrons behave like compass needles' (Science Daily, 31.3.2008)

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.

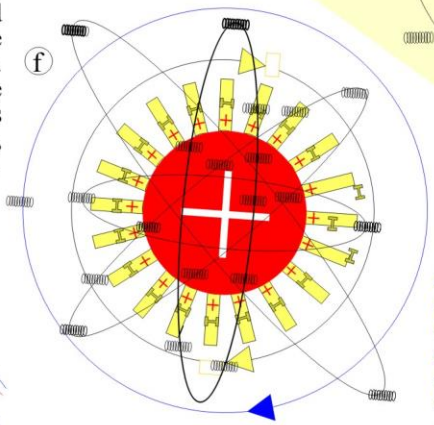


d) and e) However, when helically polarized electromagnetic radiation from the hydrogen atom bombards more complex atoms it acts on the negative charges of the neighbouring atom causing the nucleus and the electron-cage to spin axially. The mass of the electron is twice that of the neutron-negative charge,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

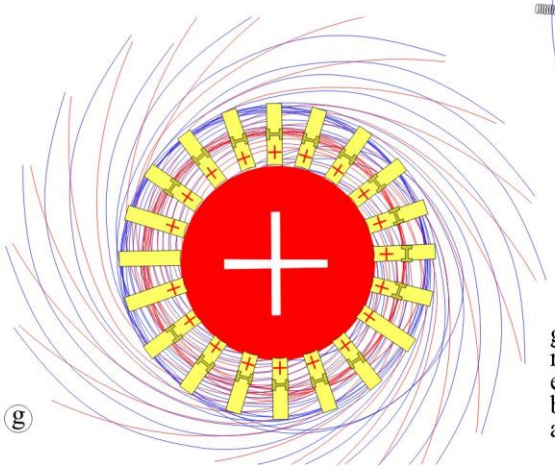


cross-section of new model with spiked-neutrons

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.



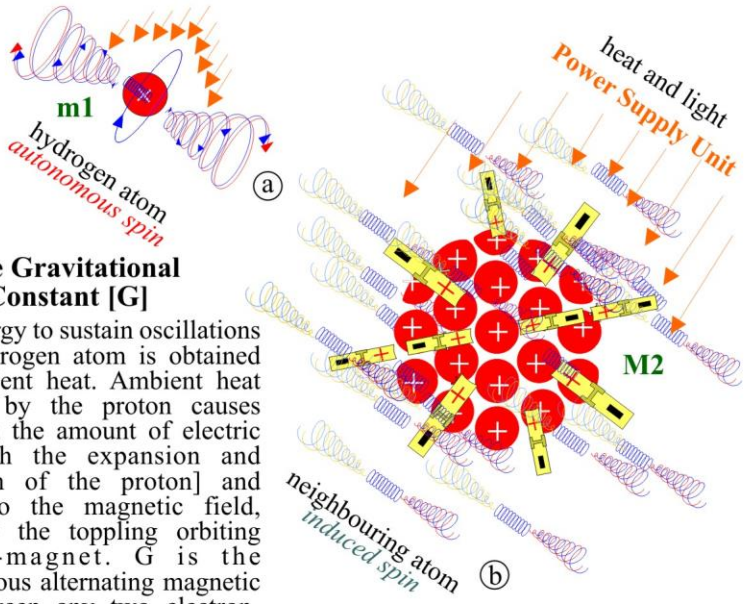
Supporting evidence: 'when electrons are bombarded by helically polarized radiation they align themselves—like compass needles—and follow the corkscrew spin of the waves' [Nature, 2009; 458 (7238):610DOI:10.1038.07871 (persistent spin helix)].



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

figure 2.

Why do falling objects *accelerate* to Earth?



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'.

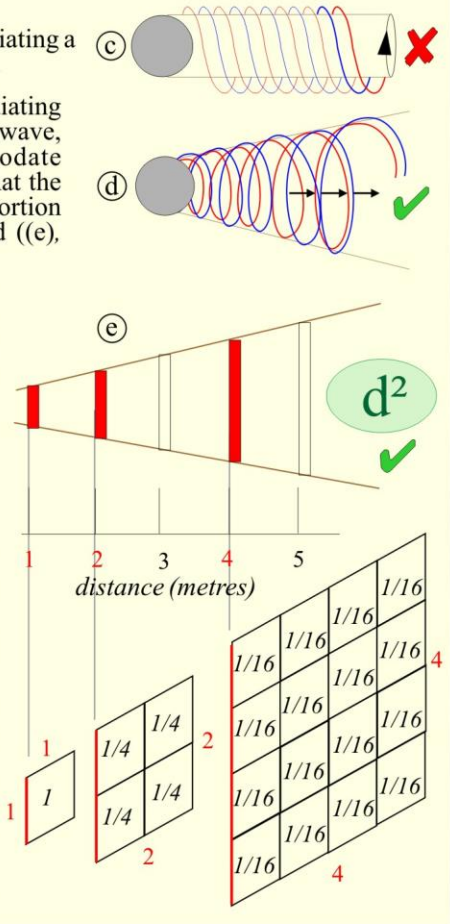
Derivation of Newton's equation

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.

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*).

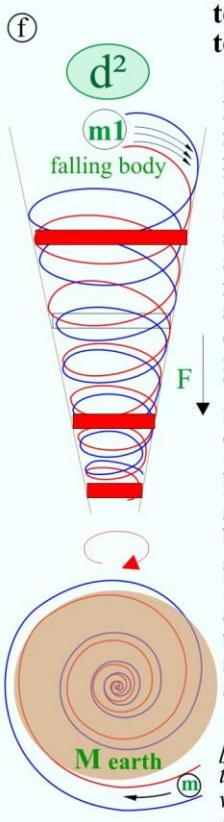
e) As theoretical gravity waves radiate from atoms they must decrease in field strength [per metre squared]. For every unit of distance travelled the radiated energy diverges geometrically and thus reduces by the square of the distance travelled (d^2). Italicised numbers inside boxes show the field strength 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)].*



Why objects *accelerate* to Earth in proportion to d^2

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 [d^2] 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 (d^2).

$$F = GmM/d^2$$

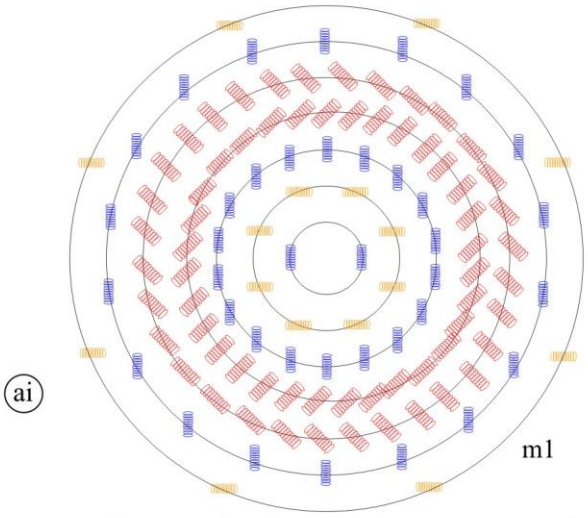
G is Newton's gravitational Constant

6.672×10^{-11} N m^2 kg^{-2}

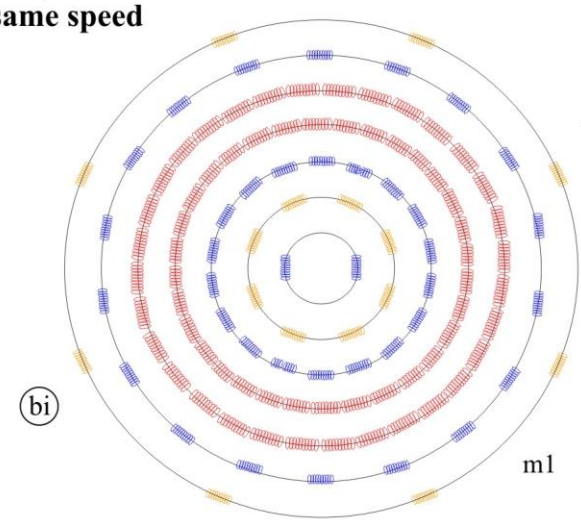
—the instantaneous alternating magnetic force between any two electron-magnets in neighbouring atoms

figure 3.

Why all objects fall at the same speed

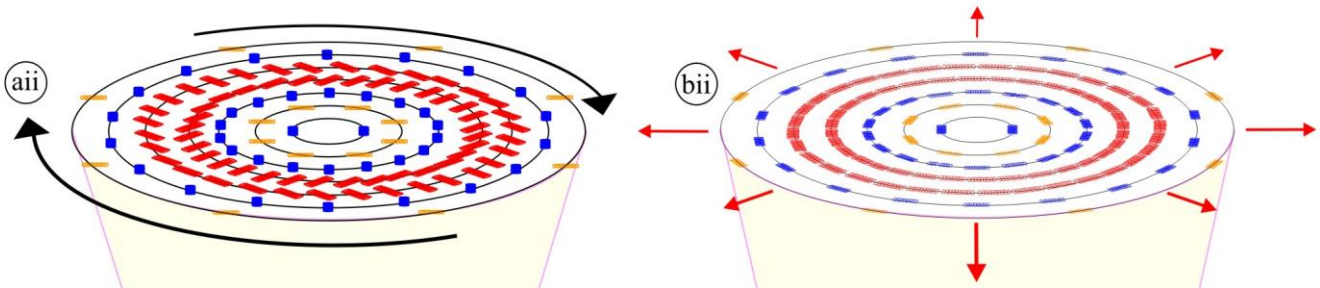


complex atom showing electron-magnet orientation susceptible to gravity wave synchronization



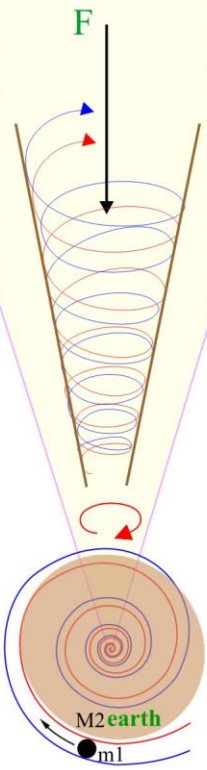
Centrifugal force, caused by the horizontal spinning of the atom, causes electron-magnets to align as shown, rendering them insensitive to gravity waves

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

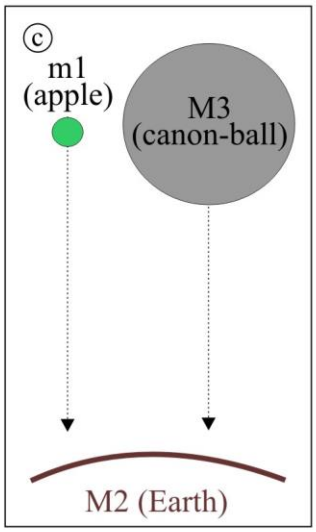


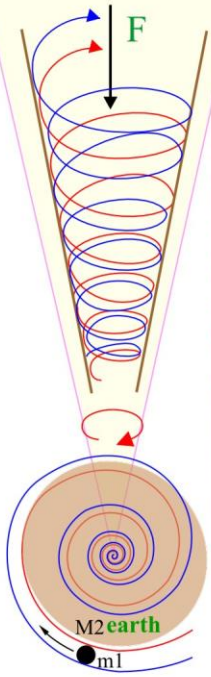
ai – aii) Schematics of electron-magnets inside a complex atom prior to commencement of spin and, bi – bii) after the vertical speed of the atom, inside the vortex, has reached 32 feet per second.

Helically polarized electromagnetic gravity waves, from the Earth, cause atom m1 to spin in the direction shown (above)



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]—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.



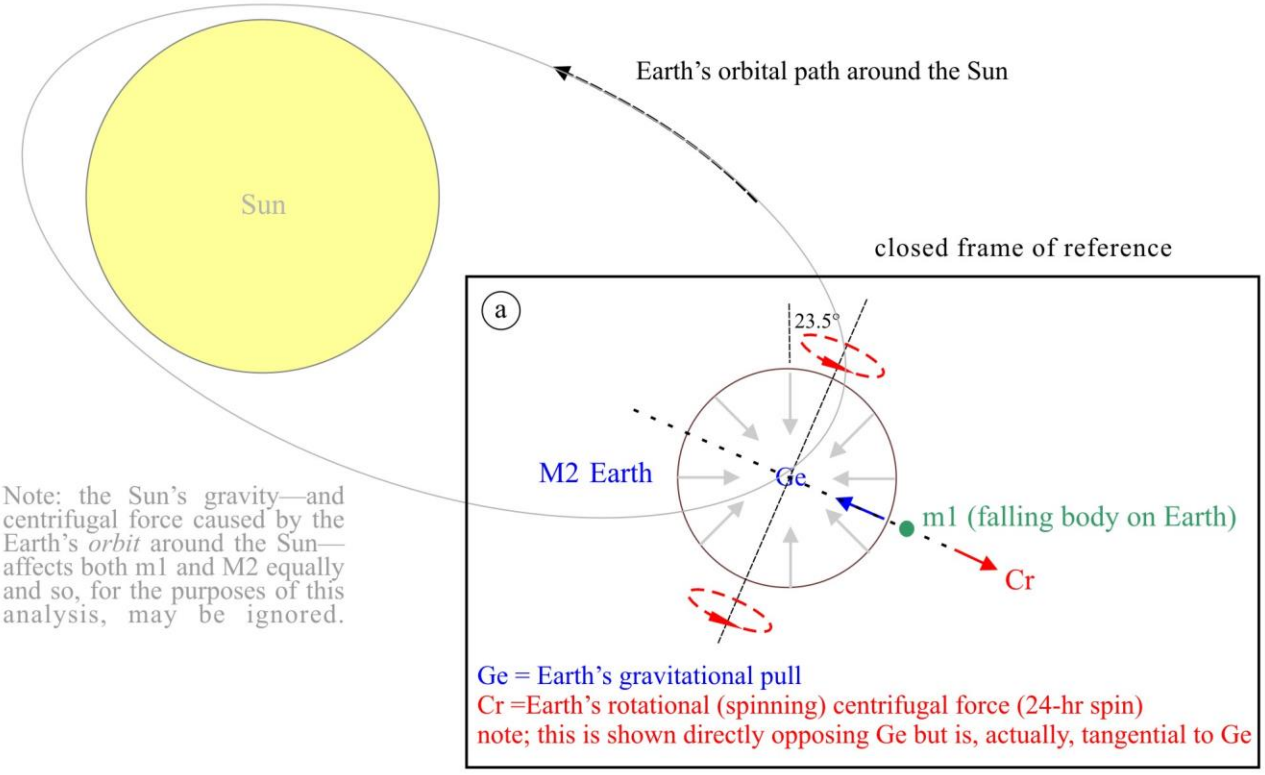


Newton's equation fails to explain why, when an apple is exchanged for a canon-ball [i.e. the mass m1, in his equation, increases] the consequential increase in F does not affect acceleration, or speed, beyond 32'/sec², as observed by Galileo: His equation fails to recognise the constraint imposed by 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.**

Newton's equation for the force of gravity between two bodies: $F = Gm1M2/d^2$

figure 4.

The real Strength of the Gravitational Force—within the Atmosphere of a spinning Planet



Newton's equation for the force of gravity between two bodies:

$$F = G\frac{m1 \times M2}{d^2}$$

F is the *ostensible* (measurable) Gravitational Force between m1 and M2

G is the Gravitational Constant

m1 is a falling body

M2 is the Earth

d is the distance, in metres, between m1 and M2

Newton's equation for the force of attraction acting on a body (m1), figure 5a), falling to Earth (M2) recognizes only the Earth's gravitational force pulling on the falling body (m1) [and the falling body's gravitational force pulling on the Earth (M2)]. Newton failed to recognize, in his equation, that a falling body is also under the influence of 'centrifugal force' caused by the spinning of the Earth on its axis (the algebraic sum of Ge and [tangential] Cr). As long as the force of Ge exceeds the effects of Cr then m1 will 'fall' to Earth. If ever the resulting tangential force of Cr should exceed Ge then m1 would be thrown clear of the Earth. This means that the force of gravity, when measured on Earth, which spins at approx 1,000 miles per hour at the equator, is greater than Newton's formula suggests but appears to be less because it is, in part, neutralized by centrifugal force.

Moreover, because centrifugal force depends on the rate of planetary spin, it means that the *apparent* gravitational force [Ge - Gr] must vary with the rate of planetary spin. This, in turn, means that the *apparent* gravitational force on other planets in our solar system, which spin more slowly than the Earth, must differ to that experienced on Earth. Mars, for example, spins 41minutes slower than the Earth [each 24 hour period] so the *apparent* gravitational field, on Mars, should be approx 2.5% stronger than that on Earth. Planets that spin more slowly generate less centrifugal force and hence experience higher levels of *effective* gravity in their atmospheres. The stronger gravitational force, acting on, m1 increases the speed of m1 as described in figure 6.

figure 5.

Effect of an increase in F on the Gravitational Brake

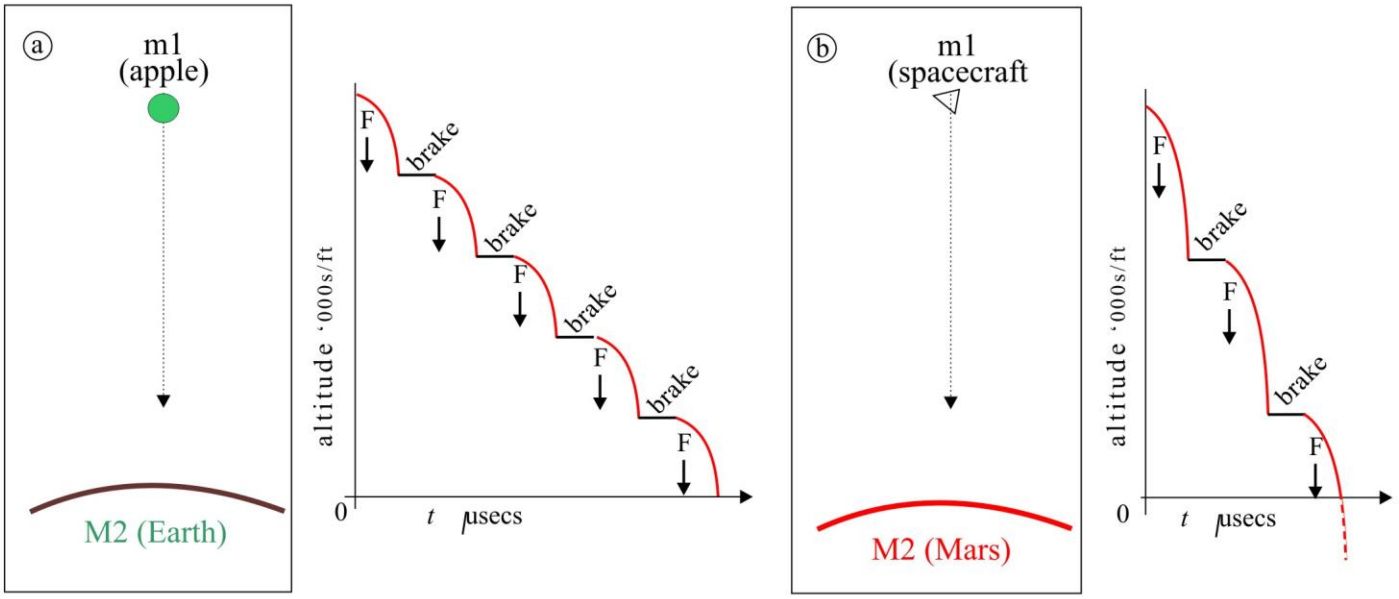


figure 6.

Figure 4. *Why all Objects fall at the same Speed* explains how centrifugal force inside a horizontally spinning atom inhibits electron synchronization, and hence the force [F] of gravitational attraction between m1 and M2 in Newton's equation. This now allows us to consider the effects of the *spinning* Earth [M2] on gravity waves emanating from the Earth impinging on body m1.

Figure 3a) explains that G is the instantaneous alternating magnetic force between any two electon-magnets in neighbouring atoms'. Thus, on a planet spinning more slowly than the Earth, for example Mars, less centrifugal force is generated and the resulting *effective* force (F) of gravity on Mars increases. The increased F thus increases the distance by which m1 approaches M2 ['falls'] before the gravitational brake 'kicks-in' (figure 6b). This 'delay' between cause and effect [between the rate of descent of a falling body and activation of the gravitational brake] is due to the *inertial time delay* between a *change of direction of* ***magnetic field*** from one electron-magnet in one atom and the resulting *change of* ***direction*** of a magnetically-coupled spinning electron-magnet in a neighbouring atom.

Figure 6a) illustrates how the gravitational brake operates for, say, 50% of the time, on Earth, resulting in a fall rate of 32' per second squared. Figure 6b) shows that when F increases, on Mars, [due to a decrease in centrifugal force caused by its slower rate of axial spin] the gravitational brake operates at the same frequency, but m1 falls a greater distance in the same period of time, resulting in an increase in the rate of 'fall' between m1 and M2, amounting to an increase in speed between the two. The increased speed to, say, 36' per second, when 'squared', results in increased acceleration between the moment of atmospheric entry and touch-down resulting in heavier impact on landing and damage to spacecraft. Mars landers should therefore be designed for the increased gravitational force prevalent on Mars. Note that when F increases, G—the gravitational constant—must change given that all other variables remain unchanged. Hence G is not a 'universal constant' in regard to the falling of bodies within atmospheres of planets with different rates of axial spin.

Conclusion: The Gravitational Force—within the atmosphere of a spinning planet [Mars]—varies in proportion to its rate of axial spin, which affects the amount of centrifugal force exerted on a 'falling' spacecraft in two ways; i) Centrifugal force reduces the force of gravity on a planet's surface; the faster the axial spin the stronger the centrifugal force and the weaker the force of apparent Gravity on the surface of the planet and vice versa. ii) Hence, centrifugal force on a falling spacecraft affects the relationship between distance travelled and the 'gravitational brake' [which causes all bodies to fall at the same speed]. These two factors result in greater acceleration of the spacecraft beyond its designed limits [based on calculations made on the more quickly spinning Earth]. Neither of these adjustments are recognised in Newton's equation for the force of gravity upon which present-day calculations are based. Hence spacecraft designed 'optimally' will travel too fast and crash into planets that spin more slowly than the Earth.

From this it can be seen that the so-called gravitational 'constant' is not a universal constant [within the atmospheres of spinning planetary bodies] but dependent, in part, on the rate of axial spin and resulting centrifugal force experienced by the planet.