First Evidence of Aether

—Newton's Gravitational Law

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Abstract As far as we know, the equation presenting Newton's gravitation law still remains as an empirical equation. The nature of the force predicted and described by this law continues hiding in heavy fog in our understanding. However, some down to Earth experiment that anyone can perform appears able to provide us with highly potential key to unlock the secret of this law and its equation.

Experiments show that if two or more objects immersed in a fluid, these objects, if free from any restriction, would automatically approach each other. This phenomenon makes it difficult for us to reject a reasoning that that heavenly objects "attract", or actually approach, each other is because they all are embraced within a fluid. Since the "attraction" is found universal between all heavenly bodies, naturally we would reason that such fluid must fulfil every space in the entire universe. This fluid under speculation is called Aether in this article, a term copied from the ancient Greeks.

As we know, any large collection of fluid has intrinsic pressure. Reliable observation and experimental data easily lead to a belief that the intrinsic pressure of the fluid causing the gravitational phenomena we know of should have a value no less than 1 x 10^{12} kg/cm^2. Based on the belief of the existence of a universal fluid, step by step calculation would render us the following equation

$$F = G\frac{M_1M_2}{R^2},$$

This equation highly resembles Newton's empirical gravitation equation, where *M*'s are mass of the objects being interested, *R* is the distance between them, and *G* is a coefficient. The only difference is that G in Newton's empirical equation is conventionally considered a constant, but in the above theoretically derived equation, G is inevitably a variable in fact.

After the detailed analysis on the reason how gravity is produced, we could have confidence to say that the so-called attractive force could have been realized by a pair of pushing forces, which just simply squeezes the objects moving toward each other. Indeed, all attractive force, such as what is observed in electromagnetism phenomena, should have all been resulted by pushing action; attraction is merely a result of illusion created by the pushing force when, however, the pushing agent is not readily apparent.

Keywords: gravity, fluid, pressure, Aether

The Experiment

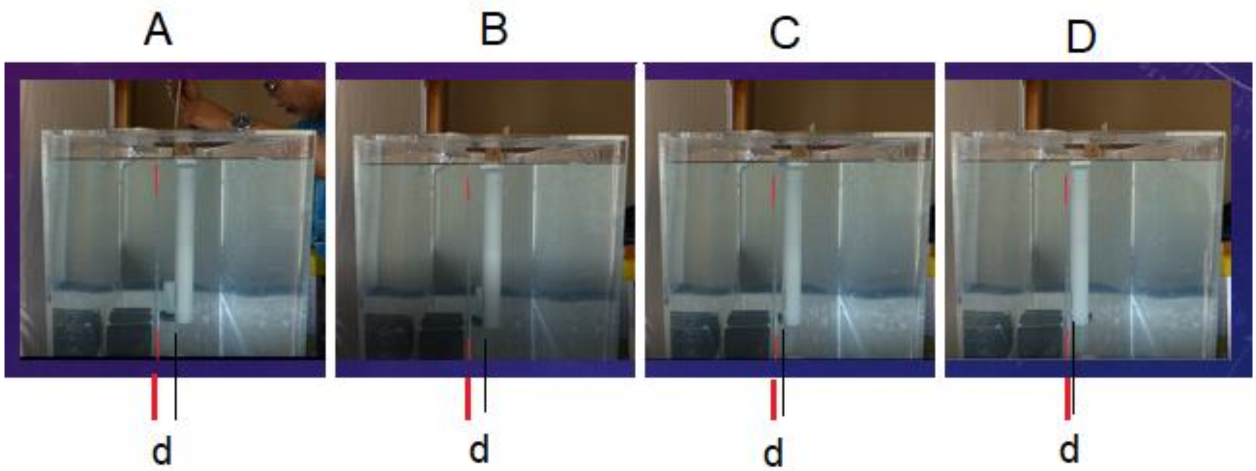
In Fig 01 are two rectangular Styrofoam boards suspending in water. They all are submerged below the water surface so that their suspension is free from the interference of surface tension of the water. The comparison of distance of separation between their bottom and top tells us that they are under the influence of some pushing force.

Fig 2 shows how two Styrofoam balls of equal size touch each other in the tank of water. The dimensions shown in Fig 2 mean that the sum of the radius of two halves from two balls is smaller than the length of the wrench socket by 1/8”; the wrench socked serves as a weight at the bottom to separate the balls. During the experiment, if the two Styrofoam balls are pushed apart, they would slowly drift back toward each other and finally touch each other again.

Fig 3 shows a series of pictures clipped from a video. The video shows something similar to what Fig 2 would show if Fig 2 also had contained multiple pictures in time sequence: free floating objects in a fluid body tend to drift toward each other.

Fig. 1 Two Styroform boards in water. They separate more at the bottom than at top

Fig 2 Two Styrofoam balls in water



d = *distance between plate and pipe*

Where a red line indicates is a plexi glass plate viewed edge on and is restricted from any movement at the bottom of the water tank.
Where a black line indicates is the surface of a white plastic pipe free floating below the water surface. Floating below the water surface, the pipe's movement is free from any surface tension from the water.

The event development in the time sequence from A to B to C to D shows that the pipe is approaching the plexi glass plate by its free movement. Now a question arises: What compels it to move while no obvious foreign force is presenting?

Fig 3 Compelled movement of unrestricted object inside a fluid body

A Fluid That Holds the Key in Formulating the Equation of Newton's Gravitational Law

Suppose, in a huge fluid body, we have two imaginary spherical surfaces of R_1 and R_2 respectively in radius and both are concentric with the bubble of radius $\boldsymbol{r}$ so that $\boldsymbol{r} < R_1 < R_2$ (Fig. 4). Naturally, the intrinsic pressure from the fluid body must exert a squeezing force compressing the bubble. If there exists any reason for the sphere of R_2 to exert such a force, called F_2, toward their common center, F_2 must encounter a resisting force, called F_1, from the smaller sphere R_1. Common sense would lead us to have $F_2 = F_1$ if the two spheres, compressing and resisting, reach a state called equilibrium and thus each sphere stays in their own size without change. When in such state, of course, the size of the bubble would stay constant, too. Between the compressing sphere and the resisting sphere in equilibrium state, we have

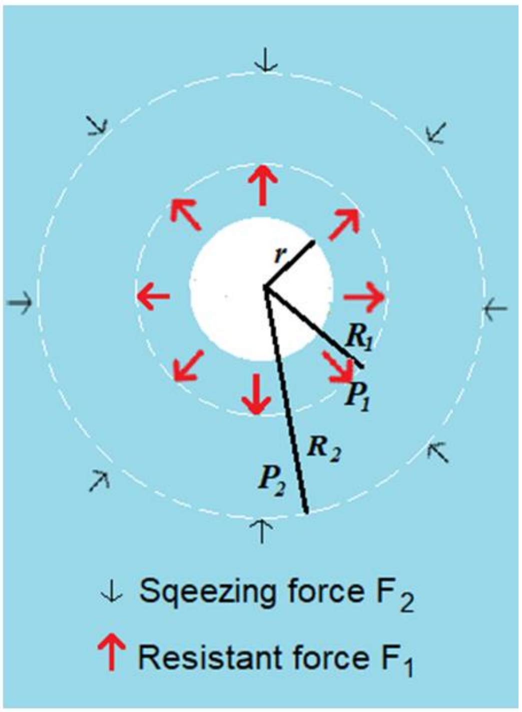


Fig. 4 Compressing force and resistant force acting over a bubble inside a fluid body

$$4\pi R_1^2 \cdot P_1 = 4\pi R_2^2 \cdot P_2 \qquad (Eq{-}1a)$$

where P_1, pointing outward as the resisting pressure, is the resisting force per unit area exerted on the surface of the sphere of R_1, and P_2 , pointing inward as the compressing pressure, is the compressing force per unit area exerted on the surface of the sphere of R_2. Immediately, we have

$$\frac{P_2}{P_1} = \frac{R_1^2}{R_2^2} \qquad (Eq{-}1b)$$

(Eq—1b) tells us that the pressure of the fluid should decrease at distance farther away from the bubble. However, farther and farther away from the bubble, the decrease must eventually reach a limit, which is the intrinsic pressure, called P_o, of the fluid. Intrinsic pressure of a fluid is a constant value that is invariant irrespective of the distance from the bubble (more detailed elaboration provided later). Due to such nature of constancy of intrinsic pressure, we can easily have the following relationship:

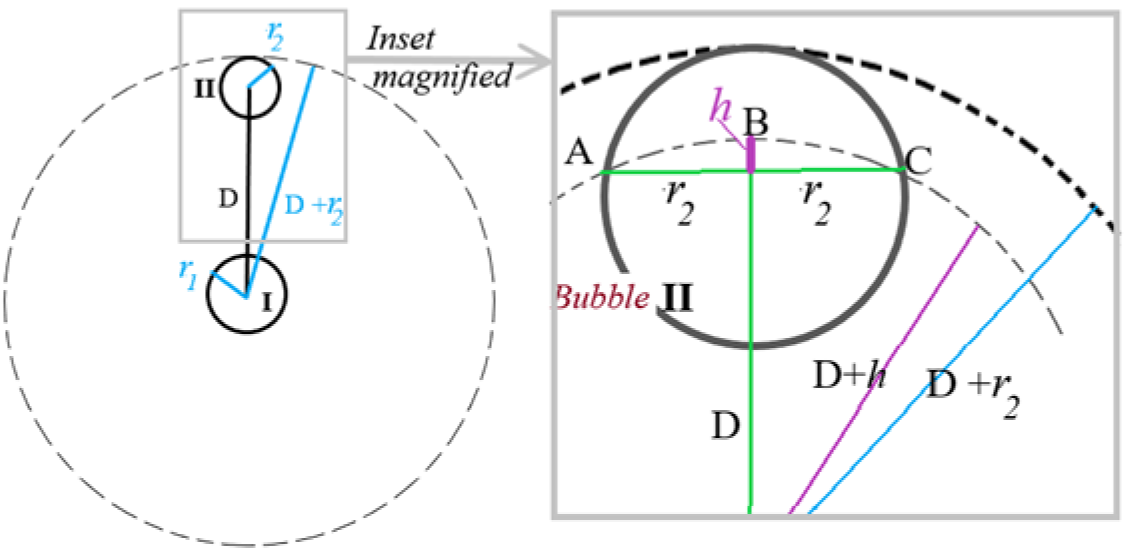
$$\boldsymbol{F_1} = \boldsymbol{F_2} = \cdots = \boldsymbol{F_n} = \cdots = \boldsymbol{P_0} \cdot \left(\boldsymbol{4\pi R_i^2}\right) \qquad (Eq{-}2)$$

where R_i is such a distance from the center of the bubble that beyond which the intrinsic pressure of the fluid is fully in charge everywhere.

(Eq.—2) naturally leads us to the following reasoning: If for a reason a bubble of radius $\boldsymbol{r}$ expands from a smaller radius R_1 to a larger radius R_2, it would have to overcome a force resisting its expansion, but the resistant force is a constant according to (Eq. —2) during the entire expansion with respect to any radius, which can be R_1 or R_2 or any value in between. Therefore, the amount of energy ΔE required for the bubble to expand against such a constant force F should be

$$\Delta E = \int_{R_1}^{R_2} F dr$$
$$= F(R_2 - R_1) \qquad (Eq-3)$$

Conversely, hinted by (Eq—3), if the bubble contracts from R_2 *to* R_1, an amount of energy $-\Delta E$ will be released.



D=distance between bubble I and II, center to center,
AC=large circle of radius r_2 of bubble II, **viewed edge on,**
h=height of crown ABC shaped out of sphere of radius D+h but cut out by AC
D+r_2=radius of a sphere circumscribing II but concentric to I

Fig. 5

Now, let's consider what happens if two bubbles are found in a neighborhood but separated by a distance that is quite large compared to the size of each bubble.

In Fig 5, bubble I and bubble II are separated by a distance D from center to center, and both are completely immersed in a formidable fluid body. Let's have an imaginary sphere of radius of D+r_2 , which is concentric to bubble I and thus circumscribing bubble II. If there had only been bubble I within this sphere, according to previous reasoning, the sphere of radius of

D+r_2 must exert compressing pressure toward bubble I. Again, according to the previous reasoning, any imaginary sphere with radius smaller than D+r_2 but sharing the same center with it would provide equal resistant force against the compression. However, the appearance of bubble II will break such equilibrium between the forces of compression and resistance for the following reason: if the smaller sphere offering resistance happens to intersect with bubble II, an area from this sphere will be cut out by bubble II and lost and thus fails to contribute the resistance with the rest of the same sphere. The loss of such resisting force ΔF can be found via $\Delta F = \Delta a \times P_n$, where Δa is the area so lost and P_n is the pressure obtained according to (Eq. –1a), (Eq. –1b), for a sphere of radius R_n intersecting bubble II.

Now, let us imagine that the sphere of radius R_n has a value of D+ h, where h is so decided that when this sphere intersect bubble II the resulted intersecting line matches out a circumference that is exactly the same as the large circle of bubble II. This large circle is represented by AC (viewed edge on) in Fig. 5 (see the inset). Naturally, since the large circle AC has a diameter of $2r_2$, its area Q is $Q = \pi r_2^2$. The crown ABC cut out by the large circle AC from the sphere of radius D+h represents the area T lost from this sphere due to the intersecting. It is this lost area T that causes the weakening of the force of the sphere of D+h in resisting the compressing force from the sphere of radius of D+r_2. The area T of crown ABC can be calculated as:

$$\begin{aligned} T &= 2\pi(D+h)h \\ &= \pi(2Dh + 2h^2) \\ &= \pi(D^2 + 2Dh + h^2 - D^2 + h^2) \\ &= \pi[(D+h)^2 - D^2 + h^2] \\ &= \pi[(D^2 + r_2^2) - D^2 + h^2] \\ &= \pi[(r_2^2 + h^2] \\ &= Q + \pi h^2 \qquad\qquad (Eq\text{—}4) \end{aligned}$$

If the ratio D/r_2 is reasonably large, such as 50, πh^2 in (Eq.—4) can be extremely trivial and can be disregarded so that T and Q can be taken as equal. As a matter of fact, with D/r_2 =50, we will have $\pi h^2 = 0.0003142 r_2^2$ while $Q = 3.1416 r_2^2$ (or T=3.1419r_2^2). If D is in astronomical value, we will be practically unable to discern the difference between T and Q. In other words, when D/r_2 is large, and we can always replace T with Q for a more quantitative comprehension on the magnitude of the force that would compel bubble II toward bubble I.

Let's assume the pressure at the surface of bubble I to be P_{r_1}. The pressure at the surface of the sphere of radius of D+r_2 can be found with the help of (Eq.—1b) as

$$P_{(D+r_2)} = \frac{r_1^2 P_{r_1}}{(D+r_2)^2} \qquad (Eq\text{—}5)$$

We can also get the pressure $P_{(D+h)}$ at the surface of the sphere of radius of D+h as

$$P_{(D+h)} = \frac{r_1^2 P_{r_1}}{(D+h)^2} \qquad (Eq\text{—}6)$$

Due to the loss of T, the net resisting force $F_{(D+h)}$ from the sphere of $D+h$ must be weakened and can be shown as, assuming D/r_2 is reasonably large:

$$\begin{aligned} F_{(D+h)} &= 4\pi(D+h)^2 P_{(D+h)} - T \cdot P_{(D+h)} \\ &= 4\pi(D+h)^2 P_{(D+h)} - Q \cdot P_{(D+h)} \\ &= 4\pi(D+h)^2 P_{(D+h)} - \pi r_2^2 \cdot P_{(D+h)} \\ &= 4\pi r_1^2 P_{r_1} - \pi r_2^2 \cdot \frac{r_1^2 P_{r_1}}{(D+h)^2} \qquad (Eq\text{—}7) \end{aligned}$$

Any sphere with a radius between (D — r_2) and (D+r_2) concentric to bubble I will intersect with bubble II and be cut a hole by bubble II. Among all these spheres, only the sphere of radius D+h will create a large circle as the result of the intersection. However, mathematically, in calculating the force loss, the area loss due to hole of the large circle can be accurately used as the mean value to represent the average area loss caused by all those smaller holes. Using the large circle as the mean value for the loss of areas and with large D/r_2, h in (Eq—7) will no longer come to the picture and leaves (Eq—7) read as

$$F_{(D+h)} = 4\pi r_1^2 P_{r_1} - \pi r_2^2 \cdot \frac{r_1^2 P_{r_1}}{D^2} \qquad (Eq\text{—}8)$$

Since the total squeezing force $F_{(D+r_2)}$ from the sphere of radius D+r_2 is also $4\pi r_1^2 P_{r_1}$, (Eq—8) thus enables us to have

$$F_{(D+r_2)} - F_{(D+h)} = \pi r_2^2 \frac{r_1^2 P_{r_1}}{D^2} \qquad (Eq\text{—}9)$$

In (Eq—9), $r_1^2 P_{r_1}$ is always a constant if r_1 remaining constant. If r_2 is also constant, the only variable we have in (Eq—9) is D, which is the distance between the two bubbles, center to center. Obviously, $F_{(D+r_2)} - F_{(D+h)}$ is a net force resulted by squeezing or pushing action without any trace of attraction. Let's replace $F_{(D+r_2)} - F_{(D+h)}$ with F. Then we have

$$F = \pi r_2^2 \frac{r_1^2 P_{r_1}}{D^2} \qquad (Eq\text{—}10)$$

All the above analysis enables us to conclude that, as shown by (Eq.—10), it is the size of the bubbles, r_1 and r_2, but not their material nature, that determines the magnitude of F. Suppose the bubbles in our concern are replaced with some homogeneous material of mass density *d* and in volume equal to each bubble respectively. Then the mass M_1 of bubble I is $M_1 = (4/3)\pi r_1^3 \cdot d$, and M_2 of bubble II is $M_2 = (4/3)\pi r_2^3 \cdot d$. Then, (Eq—10) can be rewritten as

$$F = \frac{(4/3)\pi r_2^3 \cdot d}{(4/3)r_2 \cdot d} \cdot \frac{(4/3)\pi r_1^3 \cdot d}{(4/3)\pi r_1 \cdot d} \cdot \frac{P_{r_1}}{D^2}$$
$$= \left(\frac{0.5625}{\pi r_1 r_2 d^2} \cdot P_{r_1}\right) \cdot \frac{M_1 M_2}{D^2} \qquad (Eq\text{—}11)$$

(Eq—11) matches well in form with Newton's gravitational force equation. Due to the empirical nature of Newton's equation, we have been getting used to a concept that the magnitude of gravitational force between heavenly objects is determined by the mass quantity they contain. Now, (Eq—11) tells us that it is not essentially so. The mass element and the density element together in that equation tell us that it is more up to the volume of each individual material component to determine the strength of the gravitational force. This force has tricked us for too long into recognizing it as being attractive in nature—this is easily to happen because indeed no readily realized pushing agent has ever presented itself to our human senses. Now, relying on inference other than human senses, we seem able to "arrest" this pushing agent, the Aether. Conversely, if attraction is excluded, that gravity can be a consequence of some pushing action is a powerful evidence to support the existence of the fluid, now called Aether again. Given that gravity is an omnipresent phenomenon in the universe, we can naturally claim "so should be Aether". Comparing with Newton's equation, the coefficient term $\frac{0.5625}{\pi r_1 r_2 d^2} \cdot P_{r_1}$ in (Eq—11) should be taking the role of the symbol G in that equation, which is conventionally called gravitational constant.

The inference supporting our belief of the existence of Aether is not limited to gravity. The Doppler Effect equation confirmed in Ives-Stilwell experiment is another powerful evidence portraying the existence of Aether, and further, so is the photoelectric effect, too. But we will leave the further exploration on these topics in some future articles that will be published within one or two years.

If *D* in Fig. 5 is extremely large compared to r, such as the distance between the Sun and the Earth, we can easily accept that 2 or 3 more bubbles of the same quality staying in the same neighborhood of the lonely bubble II in Fig 5 will double or triple the strength of *F* to *2F* or *3F*. By the same reasoning, a collection of *w* times of bubble II will increase *F* to *wF*. Likewise, a collection of *u* times of bubble I in the same neighborhood near I, together with the *w* times of bubble II in a huge distance away, will, based on (Eq.—11), lead us to have a total force as shown below:

$$\sum F_{wu} = \frac{0.5625}{\pi r^2 d^2} \cdot P_{r_1} \cdot \frac{(uM_1)(wM_2)}{D^2} = G \cdot \frac{(uM_1)(wM_2)}{D^2} \qquad (Eq\text{—}12)$$

In (Eq—12), uM_1 can be regarded as the total mass of one heavenly object, and wM_2 can be regarded as the total mass of another heavenly object. As an empirical equation, Newton's gravitational equation actually has been giving us the mathematical expression of (Eq.—12) other than (Eq.—11). As to the accurate value of G, we will leave it for further discussion later in this article.

Value of Intrinsic Pressure of Aether

Now, in (Eq—11) or (Eq—12), the only quantity remains in mystery is P_{r_1}, which should be related to the intrinsic pressure of the fluid body. In nuclear physics, it is commonly accepted that the value of binding energy for an α particle is 28.3 MeV (Fig. 6) [1]. This means that to disintegrate an α particle into 4 separate nucleons, 28.3 MeV of energy is needed. The radius of an alpha particle is 3.6 x 10^{-14} m [2]. On the other hand, however, to create a bubble from zero to a size of 3.6 x 10^{-14} m in radius in a medium that has pressure P_{r_1} on its serface, a work equivalent

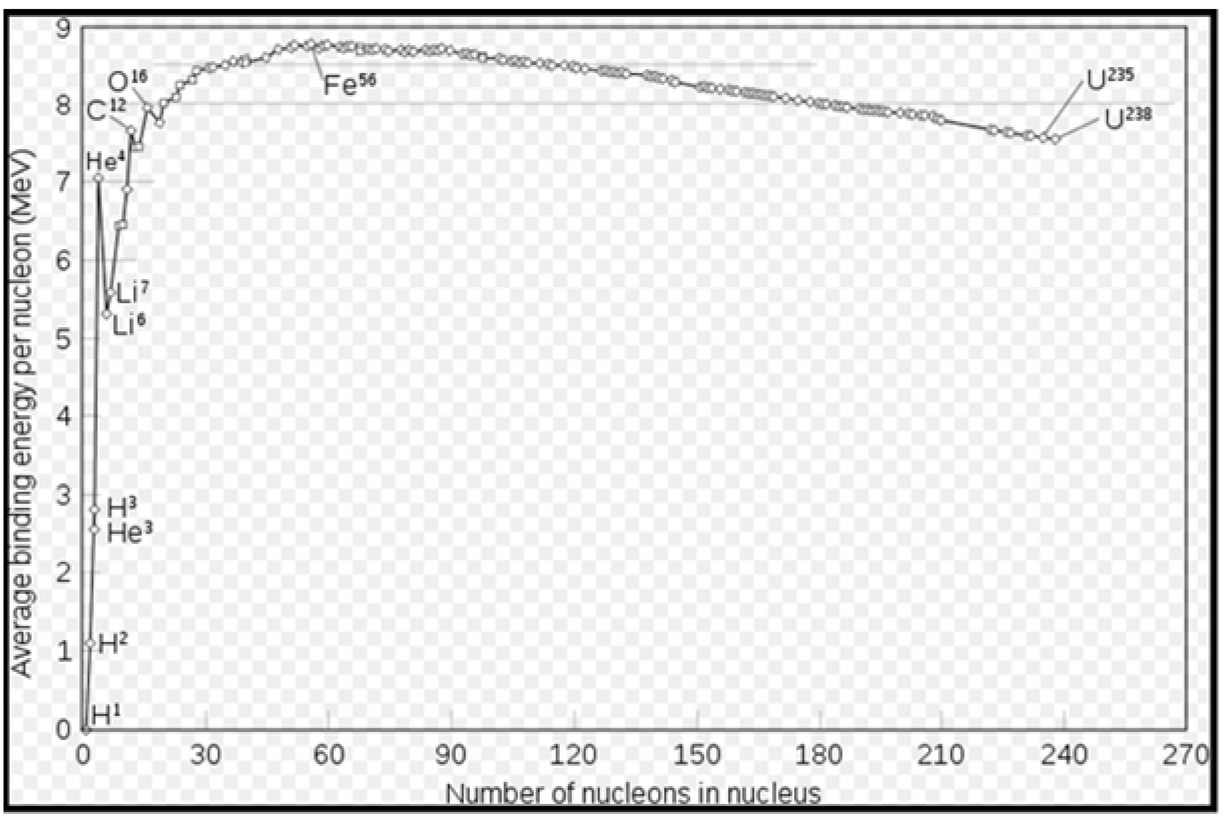


Fig. 6 Nuclear Binding Energy

Soure of credit: https://en.wikipedia.org/wiki/Nuclear_fission to the binding energy must have been done. According to (Eq.—3), the energy required for the work so done is $\Delta E = F(R_2 - R_1)$, where F is always a constant. If we take $R_1 = 0$ from which the bubble starts to take shape, and $R_2 = 3.6 \times 10^{-14}$ m, given $\Delta E = 28.3\ MeV$, we have

$$28.3\ MeV = [P_{r_1} 4\pi (3.6 \times 10^{-14} m)^2] \cdot (3.6 \times 10^{-14}\ m - 0) \qquad (Eq-13)$$

Then

$$P_{r_1} = \frac{28.3 \times 10^6\,(1.6 \times 10^{-19})\,Joule}{4\pi(3.6 \times 10^{-14}\ m)^2 \cdot (3.6 \times 10^{-14}\ m)}$$
$$= 7.72 \times 10^{27}\,\frac{N}{m^2} \qquad (Eq-14)$$

When chemical elements in liquid or solid state, the shortest distance between atoms is usually in the order of $\times 10^{-10}$ m. At standard temperature and pressure, the average shortest distance between atoms or molecules is in the order of $\times 10^{-9}$ m. These figures typically tell us that, at distance in the order of $\times 10^{-8}$ m and beyond, any particles staying in the size of some atom or molecule would not experience a force that is strong enough to drive it toward another nearby particle to cluster together. In other words, the dimension of $\times 10^{-8}$ m is a continental divide determining the existence or not of material clustering. When separated by a distance in the order of $\times 10^{-8}$ m or higher, particles staying as an individual atom or molecule would have full freedom to move away from any others at the tiniest influence of any amount of energy from the environment. On the other hand, a fluid body must spontaneously exert a pushing force on multiple objects immersed in this fluid to approach each other. So, the freedom of movement of a particle and the clenching force from the fluid are always wrestling each other. However, at and above the continental divide of the separation dimension, only if some materials happen to appear in one large location with a huge quantity, the clenching action from the fluid cannot gain upper hand. So, we can regard the pressure of the fluid the intrinsic pressure at which no clustering of material particles can happen.

From the argument leading to the establishment of (Eq.—2), we can have the freedom to take the fluidic pressure of the Aether found at the location of (>$\times 10^{-8}$ m) from any material particle the intrinsic pressure of Aether, noted as P_o. Now, suggested by (Eq.—14), for a particle at a distance of $10^{-8}\ m$ away from the α particle, (Eq—1a, 1b) should lead us to have $p_0 4\pi(1 \times 10^{-8} m)^2 = 7.72 \times 10^{27} \frac{N}{m^2} \cdot 4\pi(3.6 \times 10^{-14}\ m)^2$. The product at the right side of the equal sign is the total resisting force from the bubble containing exactly one α particle; on the left side of the equal sign is the compressing force produced by the intrinsic pressure of the Aether fluid. This equation further leads to

$$p_0 = 1.0 \times 10^{17}\,\frac{N}{m^2} \cong 1.0 \times 10^{12}\,\frac{kg}{cm^2} \qquad (Eq-15)$$

The figure $1.0 \times 10^{12}\frac{kg}{cm^2}$ for pressure shown in Eq—15 is certainly insanely high if judged by our daily experience. But don't we already have experiences that thermonuclear energy is insanely enormous compared to chemical, electromagnetic, or mechanical energy that we know of? Possibly we would like to subdue our surprise a bit in case the thermonuclear power is indeed sourced from such an insanely high intrinsic pressure of Aether. We will leave the discussion on this topic to some other articles in the future concerning Aether. On the other hand, we can also imagine that if the intrinsic pressure takes a lower and lower figure, it would be more and more impossible for small particles to hold each other to produce any compact gathering or cluster. For example, going to extreme, what if $p_o=0$? Therefore, derived from the natural data displayed by the α particle, the numeric figure $p_0 = 1.0 \times 10^{12}\frac{kg}{cm^2}$ (before nuclear energy is further investigated) should have strong reason to make us believe that this is a creditable minimum universal intrinsic pressure for the Aether at wherever gravitational phenomenon is found. If we do not have an insanely strong pushing agent, how can a massive object like the Earth be so tamely governed moving along a fundamentally fixed orbit year after year without a trace of rebellion?

A fluid with the insanely high pressure of $1.0 \times 10^{12}\frac{kg}{cm^2}$ must defy being inside of any container of some solid walls, outside of which the pressure is zero. To continue its existence, logic gives Aether only one possibility: it can find no exit to escape, and its high pressure can find no extra space to bleed to. This would happen only if the fluid's container is boundless and thus infinite, and **this boundless and infinite container can then be nothing else but our universe.** So, a question like “what is outside of the universe” is proposed based on a fake and self-refuted hypothesis—there is a world outside of the universe.

In comparison, the normal atmospheric pressure is about $1kg/cm^2$. It is this little pressure (compared to P_o) that has held our flesh body in whole, preventing our guts from being turned inside out. On the other hand, it is the huge pressure of Aether that has held all molecules of our body together, forcing one molecule to follow the movement of another molecule at no time. That is why, when a cheetah runs at its full speed, its head and tail never disintegrate into different parts moving at different speeds. **Simply, therefore, no Aether, no living beings.**

The Inevitable Fluctuation of the Gravitational "Constant" G

In the process of deriving (Eq.—11) with Fig. 5, we take advantage of the convenience of disregarding the trivial crown height *h*, while retaining the formidable distance D between the two bubbles. From there, we further arrive at (Eq.—12), which is more for describing similar interaction but between two collections of bubbles over a huge distance like what Fig. 7 portrays.

The Newton's empirical equation of gravitational law uses the distance D between the mass centers of the two heavenly bodies for calculation. Immediately we can recognize that D has to be only a statistically accurate value, but impossible to be a rigidly precise value like what is stipulated in Fig. 5. The reason is that, given that the materials in the Sun, for example, must be constantly shuffled, no bubble occupied by any nucleon there can have an unchanged distance with respect to, for example, the Earth. Through previous derivation we now know that, using such statistic value of D in concluding the empirical equation, many crown heights of *h* (refer to Eq.—4) have been sacrificed but beyond our awareness. In our theoretical derivation, these crown heights of *h* are sacrificed as many as there are nucleons and e− and e+ in each heavenly body. How many nucleons and e− and e+, for example, does our Sun have? We must remember that the sacrifice of the huge quantity of *h* for the satisfaction of our calculation is only a mathematical procedure; a mathematical sacrifice is not a physical annihilation. Being not physically annihilated, each height *h* is still associated with a crown area that has some excessive value over the area of a large circle in correspondence with that crown. The huge sum of these excessive values that are impossible to be annihilated must finally present their significance as an inevitable physical appendix influencing the reading of our observation. If we must take the masses and the distance in the gravitational equation, empirical or derived, as values that must stay firm all the time, to justify according to the observational data, the last term in this equation, the supposedly constant G , must then be victimized with the loss of constancy.

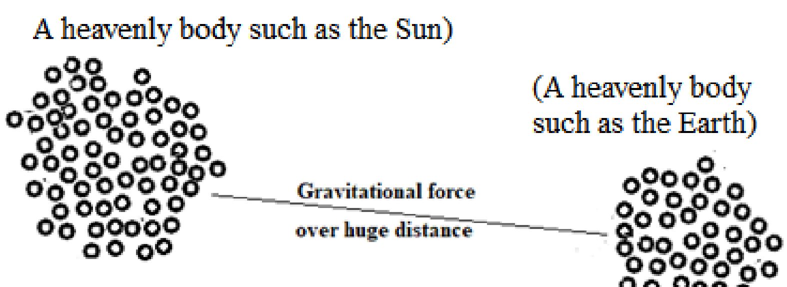


Fig 7 Gravitationl force between two heavenly bodies is a collection of tiny forces of the same nature

As a matter of fact, crown height of *h* is not only sacrificed in the derivation of (Eq.—4), but it is further sacrificed for the arrival of (Eq.—8) for large ratio of D/r_2. In addition, if the heavenly objects keep moving with respect to each other, the ratio of *h*/D between any pair of individual bubble over the large distance keeps varying, too. These must contribute reasons to further fail the G from staying as an invariant figure. Because of the failed constancy of G, it should be more proper to call the G in (Eq. 12) the gravitational coefficient other than gravitational constant. Since the distance D between the Earth and the Sun is changing in every moment during the Earth's orbital movement, the gravitational coefficient must permanently change in every moment as well. Simply, we must have two different G to be observed between the perihelion and aphelion.

There are more reasons causing the G in (Eq.—12) to fail from truly staying as a constant. Simply, given how fluidic the material in the sun is, any bubble there forever changes its distance measured from the Earth. The corresponding force concluded based on (Eq.—4) and further on (Eq.—8) and later (Eq.—11) must also change for this particular bubble. The force concluded according to (Eq.—12) is a sum of what is concluded according (Eq.—11). The permanently changing force of (Eq.—11) must lead to a permanently changing sum of force that is represented by (Eq.—12).

Another reason contributed to the variance of the observed gravitational coefficient is the mass density element contained in the coefficient in (Eq.—12). The mass density *d* is introduced in (Eq. —11), where only one bubble at each end of the separated distance D is considered; each bubble is assumed being filled with the same homogeneous material. With respect to (Eq.—12), however, at each end of distance D, a huge collection of bubbles is found (Fig.—7). All these bubbles may contain different materials and thus have different mass density. So, the *d* term found in the coefficient represented by G in (Eq. —11) can only become a statistical average value $\bar{d}$ in (Eq.—12). Given how the Sun is constantly ejecting, therefore losing, materials of different nature into the space, $\bar{d}$ for the remainder of the Sun must be a value keep fluctuating and the changing $\bar{d}$ subsequently gives G no chance to stay constant.

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