

MECHANISMS OF EARTHQUAKES

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Abstract:- No explanation for the causes of earthquakes has ever been accepted because of erroneous dogma. The correct mechanisms are given herein. The radiations from the stars in the celestial sphere produce the repulsive gravitational force. Action-at-a-distance is absurd. Therefore, a universal hyperfine gas exists that transmits the impulses of celestial radiations throughout the Universe. The aether gas is comprised of true-solid particles, called photons or quanta of radiations, which carry the radiation impulses. Since gases do not support transverse waves, then the radiation impulses are propagated longitudinally through the aether. The gravitational pressure produced by the celestial radiations must be greater than the internal solar pressure because it keeps the Sun, and other stars, from exploding. Therefore, the gravitational force is the strong force. Two bodies, e.g. the Moon and Earth, are pushed towards one another because each one blocks some of the celestial radiation impulses carrying photons, from striking the other one on their near or adjacent sides. This difference between the higher aether pressures on the outer surfaces of electrons and nuclei of the atoms of the two bodies and the lower aether pressures on the opposite surfaces of those electrons and nuclei has been erroneously called the attractive force of gravity - an action-at-a-distance which is mechanically inexplicable.

The Moon, and the Sun, block some of the celestial radiation impulses from impinging upon the electrons and nuclei of the atoms comprising the Earth. These reductions in aether pressures over a hemisphere by the Moon, and by the Sun, produce the lunar, and the solar, tidal rises of the lithosphere, the aquasphere, and the atmosphere, around the Earth. The risings, fallings and shiftings of the tectonic plates produce the earthquakes along the lines of subductions, the sea trenches, the oceanic magma ridges and the tectonic fractures or fault lines.

Since the generation, propagation and absorption of radiations are mechanical processes, then the energy losses of the impulses to collision spins and scatterings of the photons produce the redshifts of the stellar spectra. This renders the Big Bang origin of the Universe and Black Hole theories erroneous. Magnetic and electric fields, like gravitational fields, are actions of the aether photons. The Newtonian law of gravitation is neither correct nor universal.

The highly publicized large, Richter 7.1, earthquake of 17 October 1989 along the California San Andreas fault, where it ran through the Santa Cruz Mountains, evoked many articles and commentaries by seismologists, and other scientists, around the world. But apparently, no one gave the mechanics that caused earthquakes to occur. They are given herein.

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The staff of the U.S. Geological Survey had forecast that within a decade another large earthquake would occur along the San Andreas fault somewhere around the same area [1]. The widespread damage that the strong earthquake tremors produced in Oakland and San Francisco, about a hundred kilometers from the epicenter under Loma Prieta, had been unexpected. They have forecast that a strong earthquake will occur along the Hayward fault or the San Francisco peninsular San Andreas fault in the coming decades. However, these forecasts have been based upon the histories and recurrences of earthquakes around the world, and, in particular, California.

It is necessary to know what mechanisms, what dynamics, cause tectonic plates to be pushed by one another and to cause the giant ruptures or fractures between them, to be able to predict more closely than decades, when and where earthquakes are most likely to occur, in order to reduce the loss of lives and property damages in heavily urbanized areas such as the San Francisco Bay area and the Los Angeles area, or the Tokyo area.

It is obvious that very large invisible forces are necessary to move the huge tectonic blocks that support the air, the lands and the oceans over them. It is now known that the gravitational forces produced by the Moon and the Sun raise and lower those blocks about two or three feet twice a day, the midocean waters about another two or three feet on top of the blocks; and the atmosphere several kilometers higher. Along the shores of oceans and seas, these forces are called tidal forces that raise and lower the levels of millions of tons of waters around the world.

It is necessary to understand the three simple laws of motions of bodies of Isaac Newton to be able to understand the dynamics of gravitation. 1. A body at rest tends to remain at rest, or if in motion, tends to remain in motion. 2. It requires force to start the body moving, or if in motion, to slow or stop it. 3. Forces are the collision transfer of the motions of one body to another.

The first two laws were experimentally derived by Galileo. The third law was experimentally derived by Newton. The most important aspect of these three universal laws is that all forces are transferred from body to body by contact collisions.

Newton had written:

That gravity should be innate, inherent and essential to matter so that one body may act upon another at a distance through a vacuum without the mediation of anything else by and through which their action or force may be conveyed from one to another, is to me so great an absurdity that I believe no man who has in philosophical matters any competent faculty of thinking can ever fall into it. Gravity must be caused by an agent acting constantly according to certain laws.

The agent acting constantly is the invisible universal hyperfine aether gas, comprised of the smallest material particles, called quanta of radiations, or photons, because they carry impulses of light, visible and invisible, x-rays and gamma-rays. Invisible infrared light was detected around the end of the last century. It is now used for night photography, night sniper rifles, burglar alarm and door opening beams and other applications. Invisible ultraviolet light was detected about the same time. A common use has been in sunlamps for tanning the skin. Invisible x-rays were discovered also about the same time. They have many medical and industrial applications. Their invisible rays produce invisible shadows of things inside human bodies that are recorded on x-ray films or fluorescent screens. They also show flaws or fractures inside structural metals. Most people in the United States therefore are familiar with invisible radiation.

Just as the forces of sounds, audible and inaudible, are carried by the invisible molecules of the atmospheric gases, nitrogen and oxygen, from the sources of

sounds to the receivers, so are the forces of light rays, visible and invisible, carried by the invisible photons of the aether gas from the sources of lights to the receivers. The strong forces of sonic booms of jet aircraft, breaking the so-called sound barrier, can shatter windows thousands of feet below the source, rupture eardrums and produce other evidence of sound forces. Strong rays of sunlight can ignite flammables, especially when concentrated by mirrors or lenses and can cause blindness. Strong invisible rays of high velocity photons can cut diamonds and other materials. Most people therefore are familiar with invisible forces carried by minute invisible atoms and molecules and invisible photons. Although they are familiar with television sets, most people do not know that controlled invisible free electrons, accelerated by impulse carrying photons, stream across the vacuum inside the T. V. picture tube to collide with the atoms of the fluorescent coating to produce the moving pictures they see.

The Universe in Newton's time consisted of the Earth and the Moon, the Sun, the five visible planets - Mercury, Venus, Mars, Jupiter and Saturn - and the celestial sphere. Now, the largest telescopes have revealed 10 planets with many moons and rings of matter. The band of light across the night sky has been shown to consist of billions of stars that constitute our Milky Way Galaxy. Cameras on those telescopes, with hypersensitive films, given long exposure times, have extended the radius of the known Universe out to hundreds of megaparsecs (10^{21} kilometers). The estimated number of stars - singles, multiples, clusters and galaxies - in this very huge celestial sphere has now been increased to hundreds of octillions (10^{29}). The new Space Telescope, soon to be launched aboard a Space Shuttle, will reach deeper into space and reveal even more stars.

The radiations from those octillions of stars must have been emitted from the beginning of the Universe because they provide the momenta, or energies, for the photons of the universal aether gas. Although photons are the smallest particles of matter (about 10^{-15} centimeters across with a mass of about 10^{-32} grams) they constitute 90 percent of the solid matter in the Universe.

The photons of the aether gas produce pressures by their very high velocity impacts on other bodies. This phenomenon is the same as for any gas. The impacts of the billions of molecules of air inside the tires of the author's car produce a pressure that supports its 6000 pounds and holds it about 5 inches off the ground.

Immense numbers boggle the minds of men. One flies across the ocean in an airplane supported by the pressure of the air molecules' impacts on the underside, which must be greater than their pressure on the upper side. The number of air molecules around the Earth, that support thousands of airplanes every moment of time, is beyond comprehension. So are the number of molecules in the oceans. It is simply accepted, from small samples of bodies that are actually counted, that their number is immense.

Counts of visible stars in a small solid angle are multiplied by the number of like solid angles in a sphere. Far out in telescopic space, where the light from small or dim stars has become too weak to be recorded, learned estimates are made. Very far out in space, where only the light from giant stars, large clusters of stars and galaxies is strong enough to be recorded, the estimates from the nearest clusters and galaxies are used to evaluate the number of stars in the Universe. This is similar to counting the number of molecules of air in a cubic centimeter of gas, under standard conditions, and using that number to derive the number in larger volumes of air.

The radiation impulses from the octillions of stars in the surrounding celestial sphere, that impinge upon the surfaces of outer particles of the Sun, produce the aether gas gravitational pressure that holds that star intact against its own very high internal pressure; and pushes solar ejecta back down into the Sun.

The force of gravitation is therefore the strong force. It is an ether photon third-law contact collision force. It is not an inexplicable action-at-a-distance force of attraction.

The large spherical mass of the Sun obstructs the radiations from the stars in the celestial sphere. As seen from the Earth, its observed disk blocks out a circular area of the sky about a half degree in diameter. If the Sun were an inert body, it would cast an invisible gravitational shadow over half the Earth. Since the Sun can be seen from anywhere on the daylight hemisphere, then the reduced gravitational force in the shaded area is distributed over half the Earth at all times. However, the Sun is the nearest star to the Earth whose radiation force pushes the Earth away from itself. Hence, the solar radiation force opposes the celestial radiation force on the night hemisphere that pushes the Earth towards the Sun.

When the Sun is at the zenith - directly overhead - the maximum solar gravitational shadow is directly below it. The maximum solar radiation is also directly below it. The difference between those two total forces on the daylight hemisphere side, and the total celestial radiation force on the night side, is the net gravitational force pushing the Earth toward the Sun. It is balanced by the first-law centrifugal force of rotation.

The celestial radiation's gravitational force is the centripetal force that pushes stars into orbits around galaxies. These orbits are stable when the first-law centrifugal force of rotation balances that centripetal force. The all around celestial radiation's gravitational force pushes binary stars into orbits around their common center of mass. The radiations from each star push the other star away; hence, these stellar radiation forces can be called gravitational repulsive forces.

The centripetal gravitational force pushes planets into their orbits around suns. It pushes moons into orbits around planets. It pushes electrons into orbits around nuclei. It pushes the two nuclei of a binary molecule into orbits around their common center of mass.

The emissions of radiations of light, visible and invisible, and x-rays, are simply third-law contact collision accelerations of ambient ether photons by orbital electrons and nuclei of atoms and molecules up to the higher flight-velocities that produce the spectra. The propagations of light are also simple. Each impulse carrying photon crosses its free-path and collision transfers the impulse to the photon it hits, which crosses its free-path and collision transfers the impulse to the photon it hits, which Radiations of light and x-rays are not things or particles but are actions, the impulses which are carried by photons only across their free-paths. The impulses are transferred from photon to photon. These radiations are then simply impulses moving through the ether medium. Light then, is not ballistic transfer of the impulse from the source to the receivers. But photons do act ballistically while crossing their free-paths. The smallest particles of matter, the photons, push the largest stars by their high velocities and immense numbers.

The spherical mass of the Moon obstructs the radiations from the stars in the celestial sphere that are going towards the Earth. Its observed disk, as seen from the Earth, blocks out a circular area of the sky about a half degree in diameter. This is nearly the same as the disk of the Sun as seen in total solar eclipses. The Moon, being an inert body, casts an invisible gravitational shadow over the Earth. Since the Moon can be seen from anywhere on the surface of the Earth, when it is above the horizon, then the reduced gravitational force in the shaded area is distributed over half the Earth at all times. When the Moon is at zenith, the maximum lunar gravitational shadow is directly below it. Elsewhere, the intensity of the shadow is proportional to its angle of incidence.

The spherical mass of the Earth obstructs the radiations from the stars in the celestial sphere towards the Sun; and towards the Moon. This is in agreement with the third-law statement:- to each and every action there is an equal and opposite reaction.

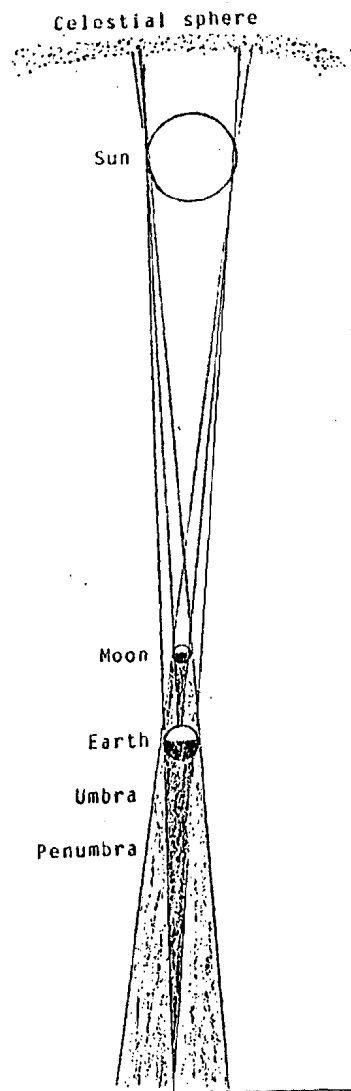


Figure 1

The Earth and the Moon are smaller than the radiant Sun. Hence, they cast invisible conical shadows, or umbras, that point away from the Sun. These shadows are surrounded by larger inverted conical shadows or penumbras. See figure 1. These shadows become visible when they fall on bodies passing through them. In a lunar eclipse, the Moon passes through the shadows of the Earth. In solar eclipse, the Earth passes through the shadows of the Moon.

When the earth is at perihelion, its closest orbital approach to the Sun, it is about 5,000,000 km or 3% closer than at aphelion, its farthest orbital distance. Viewed from the Earth, the solar disk is at its largest diameter; it therefore blocks out its largest area of the radiant celestial sphere. The reduced gravitational force in the shadows of the Sun is at a minimum. The weight forces of the atmosphere, aquasphere and lithosphere on the tectonic blocks are then at a minimum. The normal ambient aether pressure on the rest of the world pushes these plates and the molten magma beneath them, upward for the highest solar land tides. The reduced aether pressure on the atmosphere permits it to expand; and the oceans' waters are pushed towards the low pressure area for the highest solar tides.

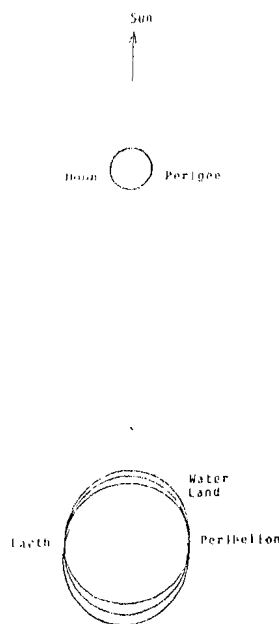


Figure 2

When the Moon is at perigee, its closest approach to the Earth, it is about 110,000 km closer than when it is at apogee, its farthest distance. Viewed from the Earth, the lunar disk is at its largest diameter. It therefore blocks out the largest area of the radiant celestial sphere. The reduced gravitational force in the shadow of the Moon is at a minimum. The normal ambient aether pressure on the rest of the world pushes those plates and the molten magma beneath them, upward for the highest lunar land tides. The radiant aether pressure on the atmosphere allows it to expand for the highest atmospheric lunar tides. The reduced aether pressure on the oceanic waters beneath the Moon allows the higher ambient aether pressure to push the waters towards the lower pressure area for the highest lunar tide.

When the Moon is in its new phase, it is between the Earth and the Sun. The lunar and solar gravitational mechanisms are then acting on the Earth at the same time to produce lunar-solar higher tides. The maximum lunar-solar tides occur when the Moon is in perigee and the Earth is in perihelion; and those three bodies are in line. It is at this time that solar eclipses occur. The visible shadow of the Moon and its invisible gravitational shadow then coincide; and the invisible gravitational shadow of the Sun and its visible light radiations also coincide, along the path that the eclipse shadow tracks over the surface of the Earth. It is along that track that earthquakes are most likely to occur. See figure 2.

The paths of total eclipses are published in U. S. Naval Observatory *Circulars* for many years in advance. Because the Moon and the Sun are almost in coincidence before the actual eclipse, and after it, then those paths are where partial eclipses are seen. These areas are therefore the next most probable earthquake zones. Since the dates, times and places of eclipses are accurately predicted, then the probable places where earthquakes are most likely to occur can be predicted.

The orbital plane of the path of the Moon is inclined about 5 degrees to the ecliptic, the apparent annual path of the Sun projected onto the celestial sphere of fixed stars. Therefore, the invisible shadow of the Moon does not always fall on the

Earth for solar eclipses. For that same reason, the solar shadow of the Earth is outside the path of the Moon; at these times, lunar eclipses are impossible. During these configurations of Sun, Moon and Earth, the gravitational shadows of the Moon and the Sun are acting upon the Earth at angles different than their solar conical shadows. Therefore, those gravitational shadows' forces produce torsional forces upon lands, seas and air, and the tectonic plates. The areas where these torsional forces act are the third most probable earthquake prone areas.

The Sun is a bright star about 1,400,000 km across. The luminous globe appears to be about a half-degree diameter disk against the celestial sphere at a distance of about 150,000,000 km. Its light rays cast fairly sharp shadows of bodies. The large mass of the Sun obstructs the celestial radiations carried by the aether photons that produce the force of gravitation. These radiations impinging upon a body on or over the Earth come from the stars in half the celestial sphere. The weight of a body then is the difference in forces produced by the aether photon impacts on the upper or top sides of the particles comprising that body - its orbital electrons and nuclei of its atoms - and the aether photon impacts on the lower or bottom sides of those particles.

Newton had derived a law of gravitation. He wrote that the gravitational force was proportional to the product of the quantity of matter, or their masses, divided by the square of their distance of separation. Later, an arbitrary constant of proportionality, G, was derived whose dimensions and numbers gave the desired force equation:

$$F = G \frac{\text{cm}^3}{\text{gm sec}^2} \frac{M \text{ gm}}{R^2 \text{ cm}^2} = \frac{m d \text{ gm cm}}{t^2 \text{ sec}^2} \quad (1)$$

The arbitrary dimension, centimeters cubed, cm^3 , cancelled out the distance of separation squared term $R^2 \text{ cm}^2$, and left a distance term, d centimeters. The arbitrarily inverse gram term, $1/\text{gm}$, cancelled out one of the mass terms, $M \text{ gm}$, leaving one m . The arbitrary seconds squared term, sec^2 , was added to complete the force dimensions.

Newton had written that gravity operates not according to the quantity of the surfaces of particles upon which it acts (as mechanical causes customarily do) but according to the solid matter which they contain. But three centuries ago, neither Newton nor anyone else knew that all gross bodies were comprised of atoms, which were comprised of true-solid nuclei and orbital electrons floating in the aether. From the geometrical equation for the area of a sphere, A , and the quantity of matter in a volume of a sphere, V , the surface area decreases slower than the volume of matter decreases, as the radius, r of the sphere decreases:

$$A = 4\pi r^2, \quad V = 4\pi r^3/3 \quad (2)$$

Therefore, somewhere on the subatomic level, a unit surface area covers a unit volume sphere. Hence, the third-law collision transfers of momenta from the celestial impulses carrying photons of the aether to the spheroidal electrons and nuclei of atoms are actions on their surface areas.

The success of the Newtonian law of gravitation, as amended over the years, lies in the fact that the weight mass of a body is a measure of the quantity of matter in that body by the difference in the aether photons collision forces on its outer, or far sides, and its inner, or adjacent, sides to the other body.

Contrary to current dogma, that law of gravitation is neither correct nor universal. It applies to only one inert body of mass m , or mass M . The other body simply blocks some of the impulse carrying aether photons from striking its near side. The reduction in force is proportional to the square of the distance, which comes from the spreading area of the impulse carrying photons in an expanding spherical shell. A

single body, like our Sun, receives the full impacts of the celestial sphere of stars, less the very small reductions due to the planets and their moon, and the rings, and other small objects in the Solar System.

The gravitational force between the Sun and one of its planets is proportional to the cube of their distance of separation, which is shown in Kepler's third-law of planetary motions. This is because the Sun is a radiant body whose radiation forces push the planets away from itself.

The mechanisms for the emissions and propagations of impulses of radiations through the aether were given earlier. The mechanism for the absorption of light is simply the third-law collision transfers of some or all the momenta of the impulse carrying photons to other photons or particles due to photon spins or off-line scatters. The losses of momenta in the visible velocity range shifts the light into the invisible infra red range.

The redshifts of the spectra of stars are then simple losses of momenta. This negates the hypothesis of the Expanding Universe and the Big Bang.

The measured, nearly constant velocity of propagation of impulses of light c , through the aether gas, under standard conditions, is the average sum of the flight-velocities of the impulse carrying photons across their mean free paths, and the mean collision velocities of the impulses, as they are transferred from photons to photons:

$$c = \frac{v_f + v_c}{2} \quad (3)$$

The nearly constant velocity of propagation of light, c , then is comprised of two inversely proportional variable velocities. The flight-velocity is greater than velocity c , and the collision velocity is less than c . Because velocity is the time change of position of a body through space, the mass of a photon must be added to the terms in (3) to give the momentum form,

$$mc = \frac{mv_f + mv_c}{2} \quad (4)$$

Squaring the velocities gives the vis viva form:

$$mc^2 = \frac{mv_f^2 + mv_c^2}{2} \quad (5)$$

Because the impulses of light exist in the aether after they are emitted, then all observers will find the same propagation velocity c , of a flash of light, under standard conditions. The impulses of radiation of a solar flare exist in the aether about 8 minutes before they are received on earth. The radio emissions from Pioneer 10 spacecraft existed in the aether for about 4 hours, as it approached the planet Neptune.

Because the collision velocity of the impulses of light as they are transferred from photon to photon, is less than c , then where the aether gas is denser, the propagation velocity of light will be less than c . Conversely, where the aether gas is rarer, the propagation velocity will be greater than c .

Because photons are the smallest true-solid particles of matter, then they are virtually point particles. Hence, photon-photon collisions are very nearly all head-on; which is shown by the very nearly straight-line propagations of light. When the photons of the aether gas have large inertial motions, then the straight-line propagations of the impulses are pushed into curved paths; as is shown in mirages and the apparent displacements of stars during eclipses of the Sun.

Currently, the energies of radiations of light are given in the wave parameters of frequencies and wavelengths. Because gases do not support transverse waves, and the aether is a hyperfine gas, then the wavelengths of an impulse carrying photon is a parameter for the length of its linear mean-free-path between collisions. The frequency of an impulse of light is the number of times it undergoes photon-photon collision transfers per second.

Because the radiations of light are in full accord with Newton's three laws of motions of bodies, Hooke's law of elasticity of solids, and the gas laws, then the frequencies of light can be equated to classical physics vis viva energy:

$$mv^2 = \frac{h}{T} = hv = \frac{hc}{\lambda} \quad (6)$$

Therefore the Planck constant of proportionality, h , contains the mass of a photon, a constant velocity, v , and a variable distance, d , that goes with the variable time period, T , for the photon to cross its mean-free-path, to give the variable velocity squared term.

The existence of photons was established by H. Hertz, in 1887, by his observations of the photoelectric effect. That is, photons carrying strong impulses of light collision drive electrons out of their orbits around nuclei of atoms. A modern proof of the existence of photons are lasers, which are devices that produce photons carrying monovelocity impulses. The Bell Telephone Laboratories did pioneer work on optical fibers for communications. That is, impulses of light are carried by photons through coated glass or plastic threads. The United States Air Force Systems Command has a photonics research laboratory in Rome, New York. These are the sufficient and necessary proofs that an aether comprised of photons exists.

A need for an awareness of the mechanisms of earthquakes is necessary for the more accurate predictions of when and where earthquakes are most likely to occur. Early warnings of impending earthquakes can reduce the number of deaths and injuries, and damages to property.

The very strong forces that keep the Sun from exploding, due to its high internal pressure, were shown to be the impulses of stellar radiations, from the octillions of stars in the celestial sphere, carried by the aether photons. The gravitational force, that pushes all bodies towards the center of the earth, is the small difference between the impulses impinging upon the upper surface of the electrons and nuclei of their constituent atoms and those impulses impinging upon their under surfaces. The mass or quantity of matter in a body is measured by the gravitational weight force.

The blockage of the celestial radiations by the mass of the Moon, and the mass of the Sun, reduces the gravitational force on the bodies comprising the Earth. The reductions in the weights of the gas molecules of the air, in the invisible gravitational shadows of the Moon and the Sun, causes them to expand and to rise as an atmospheric tide. The reduction of the weights of the waters and seas and the lands and the air over the tectonic plates causes them to be pushed upward by the molten magma upon which they float. The upward and sideways motions of the plates produce the observed earthquakes.

In the development of this work, it became necessary to rectify some of the obsolete dogma existing in modern physics.

As postulated by J. C. Maxwell [6, 7, 8], there are no such things as charges on bodies. There are neither negative (-) charges on electrons nor positive (+) charges on protons. No one, over the past 400 years, has been able to say what a charge on a body is, or how it produces an action-at-a-distance force of attraction, or a force of repulsion. Like magnetic, electric and gravitational fields, charges are actions of the aether photons. The

Attractive forces between bodies are reductions in the aether pressures between them. The repulsive forces between bodies are the increases in the aether pressures between them.

Therefore, the hydrogen nucleus is a neutron; from the original experiments of J. Chadwick. The hydrogen atom is then the proton, a bit of a particle; and so is the positron. The positive charge mechanism is given in the Unification of the Sciences.

Electrons are held in their orbits around nuclei of atoms, not by an inexplicable action-at-a-distance force of electrical attraction, but they are held in orbits by the contact collision forces of the aether photons, being greater on their outer surface areas than on their inner surface areas. This is the same force that holds moons in their orbits around planets, planets in orbits around suns, et cetera.

The universal law of propagation of impulses of radiations through the aether was given in (3). That is, half the sum of the flight-velocity of the impulse carrying photons across their mean-free-paths and the collision-velocity of the impulse as it is transferred from photon to photon, is equal to the nearly constant propagation velocity c . The constant c , then is comprised of two inversely proportional variable velocities. The constant c varies with the density of the aether medium.

Because the flight-velocity of the impulse carrying photon across its mean free-path is greater than c , then the postulate of Poincaré, that no velocity could exceed that of the propagation velocity, c , was erroneous at inception.

When large numbers of aether photons, that transmit the impulses of radiations, have motions fully or partially perpendicular to the straight line propagations of rays of light, those rays are bent or displaced, or warped by the aether wind. When this occurs on earth it is called a mirage. Objects, even cities, that are actually below the horizon, appear. This aether wind mechanism applies to rays of light from stars that pass close to the Sun, as is observed during a total eclipse. Those stars appear to be displaced temporarily. The aether wind is the physical basis for the phenomena of rays of starlight bending around galaxies, called the gravitational lens effect. (The Michelson interferometer was not capable of detecting the aether wind.)

Space itself is the nothingness between bodies. Nothingness cannot be warped, bent, twisted or expanded. Bodies in space can be moved to give the illusion that the space between them expanded.

The universal mechanisms of Nature are given in three laws of motions of bodies of Newton, the law of elasticity of solids of Hooke and the gas laws of Boyle, Charles, Gay-Lussac, Avagadro and D. Bernoulli. They are applicable in the micocosmos just as they are in the macocosmos, from subatomic particles to galaxies. This fact simplifies and unifies all of the physical sciences.

The fact that the gravitational shadow forces between bodies are reductions in the aether pressures between them, that are equal to the hypothetical force of attraction, does not change the mathematics of celestial mechanics of Laplace and others, who had used that mathematical equality force in their works. All that is required is the conceptual change from the erroneous parameter of attraction to the correct mechanism of aether pressure differences.

In a museum in Washington, D. C., there is a huge cylinder of aluminum that is a tribute to the erroneous concept that gravity was propagated by long transverse waves.

References and Notes

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