GRAVISPHERES:
What's the Matter with Dark Matter? [1]

(re-edit: June 22, 2020)

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What's the matter with Dark Matter?[1]

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ABSTRACT
The cause of gravity and its relationship to the Universe is explored together with a possible connection between the nearest Black Hole A0620-00/V616 Mon binary system, and Earth. Colliding black holes cause gravitational waves and orphaned rogue planets. This leads to a discussion on Dark Matter and the possibility that Big G may represent a polar force, and vary throughout the universe.

Keywords:
V616, Monoceros, elastic link, Gravity Waves, Electromagnetic Momentum, Gravisphere, inverse-square law, dark matter, Planck constant, positrons, Big G, expanding earth, quantum entanglement, LIGO, rogue planet

1. BACKGROUND

The BIG BANG OR STEADY STATE[2] report shows the illustration in Figure 1. It concludes that Black Hole AO620/V616Mon[3] (V616) is the centre of our gravitational zone of influence, and that our solar system gravity forms at V616. The gravity so formed follows the inverse-square law to become weaker with increasing distance from the black hole. This implies that the Gravitational Constant[4] value G varies throughout the universe (the term "constant" becomes oxymoronic). The GRAVIMASS[5] report on page 11 highlights the difference between fixed and elastic links concluding that the nature of gravity is elastic and can transmit energy to objects operating within its gravitational field. It further concludes that transfer of energy to the Earth during its orbit around the Sun, results in energy being converted to mass at the calculated rate of 212,245 tonnes per annum – resulting in an expanding earth.

The BIG BANG OR STEADY STATE report suggests material digested into a Black Hole results in both positrons and electrons being ejected from the axis of the Black Hole, both particles entangle to form a neutrally charged gravitation net, previously described as gravitational waves, but now referred to as Electromagnetic Gravity Strings (EGS).
The report also illustrates a summarised black hole digestion process, including pair production[6] as shown in Figure 2.

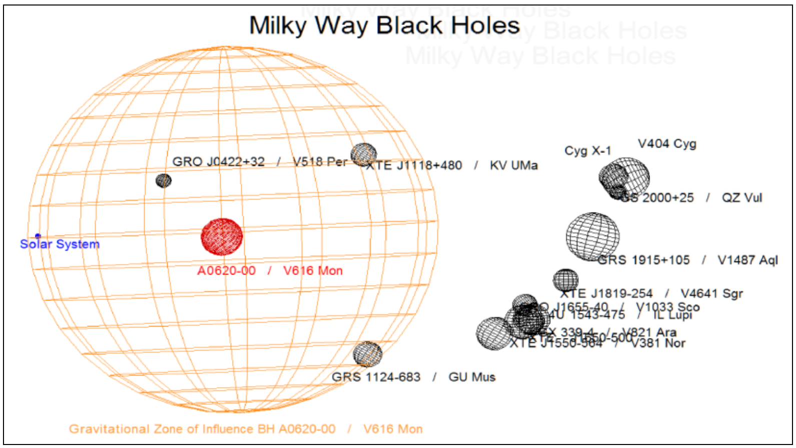


Figure 1.

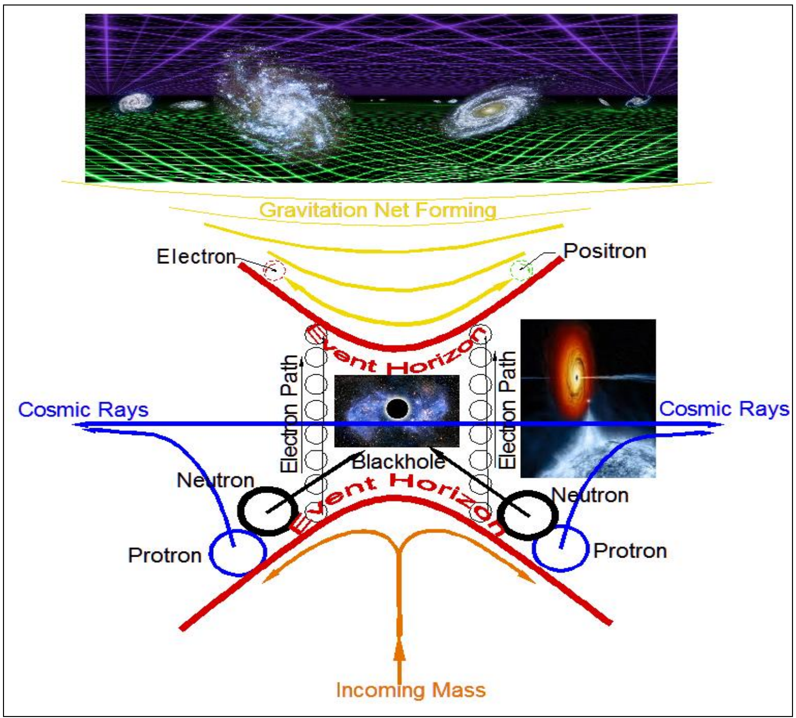


Figure 2.

Figure 2 shows Black Hole structure with incoming mass moving along the first Event Horizon where electrons, protons and neutrons are progressively stripped off.
These components form into electromagnetic gravitation strings (EGS), cosmic rays and enhanced Black Hole mass, respectively. This treatise explores the nature of this phenomenon in more detail and regards gravity as an example of quantum entanglement.
Cosmic rays reaching Earth were traced back to the vicinity of Canis Major – which is the same region as the Monoceros nebula. Graphic interpretation at Figure 3.[7]

> *Astronomers have detected more extremely energetic cosmic particles coming from one side of the sky than the other.*

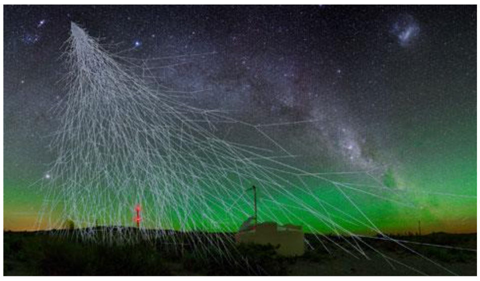


Figure 3.

2. QUANTUM ENTANGLEMENT[8]

"***Quantum entanglement*** *is a physical phenomenon that occurs when pairs or groups of particles are generated or interact in ways such that the quantum state of each particle cannot be described independently of the others, even when the particles are separated by a large distance—instead, a quantum state must be described for the system as a whole.*"

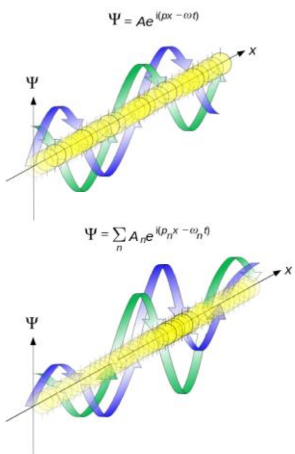
This definition allows for "groups of particles" to be entangled which is assumed to be the case at V616. In this model there is one end set of entangled particles residing at V616, while the other ends radiate in a spherical pattern forming the V616 Gravisphere. Note in Figure 1, there are other tentatively identified smaller Black Holes in our Milky Way galaxy which have their own set of entangled particles, but because one end of the entanglement is always fixed at a Black Hole, the other ends radiate out with weakening influence throughout the universe. However, each Black Hole has unique sets of entangled particles which can therefore be best described as operating in a separate dimension to all other Black Holes. This could be otherwise illustrated as entangled particles operating on separate floors in a high rise building with no connection between the floors.

Notes:[9]

Why is there more matter than antimatter?

The question of why there is so much more matter than its oppositely-charged and oppositely-spinning twin, antimatter, is actually a question of why anything exists at all. One assumes the universe would treat matter and antimatter symmetrically, and thus that, at the moment of the Big Bang, equal amounts of matter and antimatter should have been produced. But if that had happened, there would have been a total annihilation of both: Protons would have cancelled with antiprotons, electrons with anti-electrons (positrons), neutrons with antineutrons, and so on, leaving behind a dull sea of photons in a matterless expanse. For some reason, there was excess matter that didn't get annihilated, and here we are. For this, there is no accepted explanation. The most detailed test to date of the differences between matter and antimatter, announced in August 2015, confirm they are mirror images of each other, providing exactly zero new paths toward understanding the mystery of why matter is far more common.

It seems the missing antimatter possibly resides at black hole boundaries.



3. MATTER WAVES[10]

*De Broglie, in his 1924 PhD thesis, proposed that just as light has both wave-like and particle-like properties, electrons also have wave-like properties (*Figure 4*). De Broglie did not simplify his equation into the one that bears his name. He did* *conclude that hv0 = m0c2.[4][5] He also referred to Einstein's famous relativity equation. Thus, it was a simple step to get to the equation that bears his name.[6] Also, by rearranging the momentum equation stated in the above section, we find a relationship between the wavelength, λ, associated with an electron and its momentum, p, through the Planck constant, h:[7]*

λ = h p . {\displaystyle \lambda ={\frac {h}{p}}.} \lambda ={\frac {h}{p}}.

Figure 4.

The relationship has since been shown to hold for all types of matter: all matter exhibits properties of both particles and waves.

The nature of entangled particles is of critical importance because it considers why the speed of light is not a factor in explaining how gravity can influence at a distance.

We also know that entangled particles can operate over long distances. Recent research reports:[11]

Scientists have used satellite technology for the first time to generate and transmit entangled photons — particles of light — across a record distance of 1,200 kilometres on Earth.

While this is not the same distance as light years, there is nothing here to exclude the possibility of those larger distances. It appears that a stable conduit of waves and particles is formed between the entangled particles, or groups of particles, which are not distant dependent. The conduit appears to operate as an elastic link between V616 and other masses in the V616 Gravisphere. As a conduit link it is possible to regard the entire conduit as a single entity. Activity anywhere along the link will provide simultaneous reaction throughout the entangled group, and is independent on the speed of light

4. HAWKING RADIATION[12]

***Hawking radiation** also known as **Hawking-Zel'dovich radiation**[1] is blackbody radiation that is predicted to be released by black holes, due to quantum effects near the event horizon. It is named after the physicist Stephen Hawking, who provided a theoretical argument for its existence in 1974,[2] and sometimes also after Jacob Bekenstein, who predicted that black holes should have a finite entropy.[3]*

Hawking's work followed his visit to Moscow in 1973 where the Soviet scientists Yakov Zeldovich and Alexei Starobinsky showed him that, according to the quantum mechanical uncertainty principle, rotating black holes should create and emit particles.[4] Hawking radiation reduces the mass and energy of black holes and is therefore also known as **black hole evaporation***. Because of this, black holes that do not gain mass through other means are expected to shrink and ultimately vanish. Micro black holes are predicted to be larger emitters of radiation than larger black holes and should shrink and dissipate faster.*

As new mass enfolds into a black hole, there must be an equivalent mass or energy retained, or emitted so the overall state of 'entropy' does not change. This implies that entangled particles generated at a black hole also transmit energy. Some of the energy is in the form of entangled particles delivering gravity, while another energy form emerges as cosmic radiation. The retained mass fraction stays in the black hole which increases in size over time.

Black Hole radiation appears to be a variable emission based on the quantity of material entering the region. This is similar to feeding a fire with fuel. Smoke and flames appears as new fuel is added, but disappears once the fuel is consumed. Evidence of this type of phenomenon has been observed:[13]

> *Starting in 2009, J1415+1320 started doing something extremely strange. Over the course of about a year, the blazar grew brighter, then dimmer, then brighter again. Plotting its brightness over time revealed a symmetrical U shape in the data.*

And

> *Now, Readhead and his colleagues argue that they're seeing the blazar's black hole emit tiny burps of plasma, magnified hundreds of times by a new kind of gravitational lens.*

The EGS radiation field emanating from a black hole also operates as electromagnetic radiation which includes electromagnetic momentum.[14] These are entangled particles with one end stable at the black hole, and the other end having a vector trajectory away from the black hole. The EGS rays form into a spherical sphere of influence referred to as a Gravisphere, but exist as a progressively weakening group of entangled particles, and weaker gravity attraction following the inverse square law.

This elastic link can transfer energy to the mass in response to any exercise of the link. A comparison with a violin string is appropriate. Figure 5.[15] shows the bow impacting the string and causing it to emit energy in the form of sound. At the finger board end the strings are closer together and similar to alpha. The bridge end shows strings further apart and less concentrated, similar to beta.

Figure 5.

EGS fields are not exclusive to black holes, but do exist between mass objects. So the Moon is attracted to the Earth and both to the Sun. These are strong gravitational fields, but a weak field of attraction also exists with V616.[16]

EGS can be impacted by objects orbiting within its sphere of influence, and the energy produced takes the form of extra mass[17] created in the orbiting object. In this way, mass is transferred from the black hole back to objects orbiting in the Gravisphere. More massive orbiting objects have more momentum and will attract the most extra mass.

When black holes approach each other, Coulomb's inverse square law of repulsion applies as they both have similar surface charges. However, Newton's law of universal gravitation also applies which serves to attract the two black holes more strongly as they approach each other. Apparently, Newton's law prevails on a significant number of occasions as there are several recent recordings of these collisions.

5. COLLIDING BLACK HOLES

Note:[18]

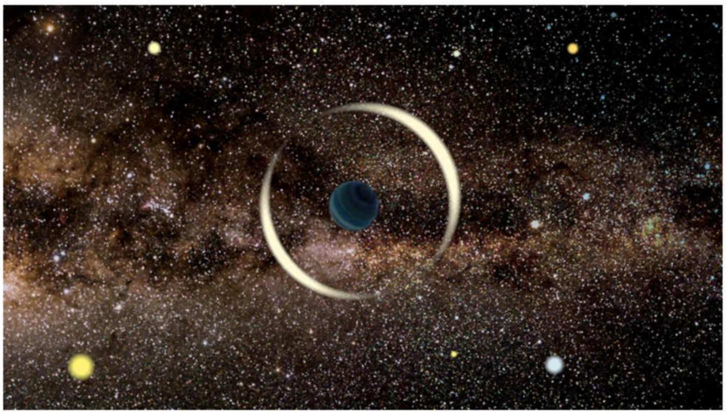
Scientists have detected for the third time gravitational waves coming from the merging of two massive black holes somewhere in the universe, the wrinkles in the fabric of space and time created by a powerful cosmic collision.

About 3-billion light-years away from Earth, the two black holes, far more massive than our sun, whirled around each other and eventually collided, generating waves like ripples in a

pond. The waves spread out into the universe, expanding and contracting spacetime as they went. They reached Earth in January, where they were detected as tiny vibrations by sensitive instruments in twin observatories in Louisiana and Washington state. The collision created a single, bigger black hole, with a mass about 49 times that of the sun, the Laser Interferometer Gravitational-Wave Observatory (LIGO) announced Thursday.
LIGO first detected gravitational waves in September 2015 and publicly announced the discovery in February 2016, a century after Albert Einstein predicted their existence. The observatory announced a second detection last June, made in December 2015.
Gravitation waves are generated when a pair of black holes collide together. During this collision the EGS entangled particles from the smaller black hole are orphaned by the larger body, when their alpha ends are absorbed by the larger black hole.

This results in a ripple effect across the entire universe which is recorded on LIGO instruments. We can describe this as black hole "A" consuming black hole "B", so "B" no longer exists.

It is possible the orphaned entangled particles from "B" may not exhibit any gravitational attraction towards "A", because the centre of their Gravisphere "B" no longer exists and the capturing black hole "A" operates in a different dimension. The net result is that orphaned planets which have survived the black hole capture event from Gravisphere "B" can operate as rogue planets roaming the galaxy.[19] Figure 6, simulates a rouge planet not exhibiting any gravitational attraction to another body.



QUICK FLASH The light from a distant star may temporarily brighten when a free-floating planet passes in front of the star. This artist's illustration shows how a rogue planet's gravity distorts and focuses distant starlight as a ring around the planet.
J. SKOWRON/WARSAW UNIV. OBSERVATORY

Figure 6.

6. TIME AND GRAVITY

In reference[2] we commented on the possibility that Big G could be a variable with polar direction associated with Black Hole Monoceros V616. A much higher value for G is expected at the surface of a black hole than on Earth, but limited by the gravitational force required to strip an electron from the outer shell of an atom. In this model G becomes a proxy expression for the force of gravity.

It is also apparent that as gravity increases time decreases.[20] Gravity is highest at the black hole boundary, where time becomes infinitely slow (sic due to the bending of space time), as shown in Figure 7.

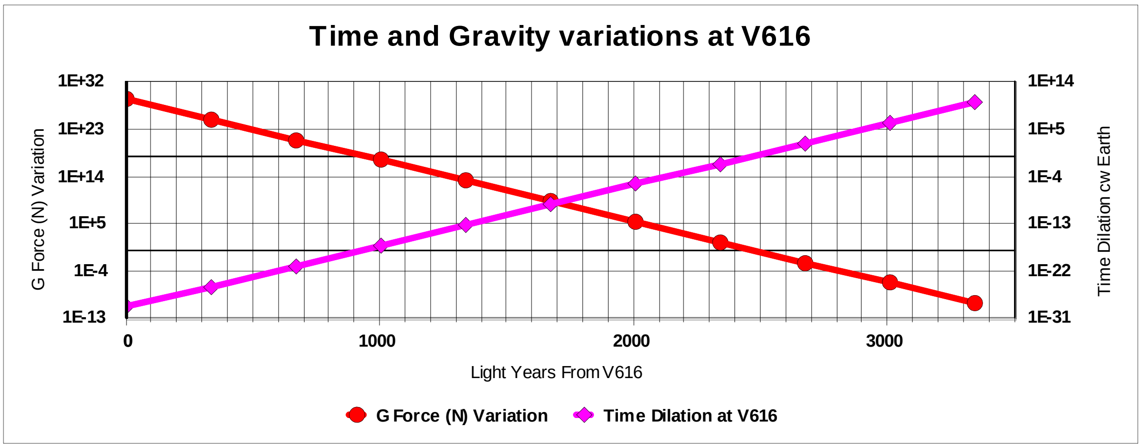


Figure 7.

While G on earth has an approximate value of 6.693 x 10^{-11} m^3 kg^{-1} s^{-2} (say N`), G on the edge of black hole V616 has a calculated value of G = 6.693 × $10^{28}$ N` (39 times greater). On the other hand, time (T) has the reciprocal effect to G. So a unit of time on the edge of a black hole has a value 39 times less than on Earth. These relationships can be summarised:
Big G = Where = Light Years from a black hole.
And
Time Dilation T = 1/G

In a galaxy, several black holes concentrated near the centre have a reinforcing effect and spread high G values over a wider area than is the case on the outer limbs of the galaxy. In the more remote regions of a galaxy G values diminish, but time values increase. These factors influence our conclusions regarding Dark Matter and galaxy arm shapes.

7. DARK MATTER

Galaxy rotation curves plot the orbital speeds of visible stars in a galaxy against their radial distance from the centre as discussed:[21]

Figure 8. The rotation curve of a disc galaxy (also called a velocity curve) is a plot of the orbital speeds of visible stars or gas in that galaxy versus their radial distance from that galaxy's centre. It is typically rendered graphically as a plot, and the data observed from each side of a spiral galaxy are generally asymmetric, so that data from each side are averaged to create the curve. A significant discrepancy exists between the experimental curves observed, and a curve derived from theory. The theory of dark matter was postulated to account for the variance.

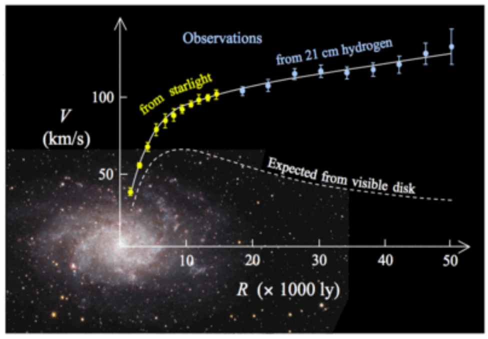


Figure 8.

Rotation curve of spiral galaxy M 33 (yellow and blue points with error bars), and a predicted one from distribution of the visible matter (white line). The discrepancy between the two curves can be accounted for by adding a dark matter halo surrounding the galaxy

And:

The galaxy rotation problem is the discrepancy between observed galaxy rotation curves and the theoretical prediction, assuming a centrally dominated mass associated with the observed *luminous material. When mass profiles of galaxies are calculated from the distribution of stars in spirals and mass-to-light ratios in the stellar disks, they do not match with the masses derived from the observed rotation curves and the law of gravity. A solution to this conundrum is to hypothesize the existence of dark matter and to assume its distribution from the galaxy's center out to its halo.*

Dark Matter is inferred from the orbital motion of galaxies. It is an empirical solution required to explain why galaxy rotation does not appear to follow the laws of physics.[22]

The masses of galaxies are found from the orbital motion of their stars. Stars in a more massive galaxy will orbit faster than those in a lower mass galaxy because the greater gravity force of the massive galaxy will cause larger accelerations of its stars. By measuring the star speeds, you find out how much gravity there is in the galaxy. Since gravity depends on mass and distance, knowing the size of the star orbits enables you to derive the galaxy's mass.

For spiral galaxies the rotation curve is used to measure their masses like is done to find the mass of the Milky Way. The rotation curve shows how orbital speeds in a galaxy depend on their distance from the galaxy's centre.

The mass inside a given distance from the centre = (orbital speed)^2 × (distance from the centre)/G.

This equation can be written as $M = O^2$ x R/G and assumes that the gravitational constant, Big G, is universal and does not vary through the universe. The value for G is simply quoted as G = 6.674 x 10^{-11} N`. The accuracy of this quantity has proved difficult to define within an accuracy of 0.31%.

However, if G varies as discussed previously, the apparent value for M will reduce as G increases. The equation for orbital speed can be reduced to O=2aPi/T where “a” is the length of the semi major axis, and T is the orbital period for substantially circular orbits.[23] Similarly if time varies in a reciprocal manner, then apparent M reduces as the orbital speed increases following a squared relationship. Both of these factors lead to a conclusion that the apparent mass of a galaxy is underestimated when based on calculations assuming G is constant and equivalent to the value measured on Earth.

8. GALAXY MASS SIMULATION

Simulation of these factors is shown in Figure 9.

Galaxy Mass Simulation							
				Earth units Base Case	Increasing R	Reducing R	Increasing a Base Case R
Inputs	Orbital Radius	light years	a	1075	1075	1075	2150
	Distance from black hole	light years	R	3343	3510	3184	3343
Outputs							
	Gravity		G	6.56E-011	7.36E-013	4.72E-009	6.56E-011
	Time Dilation		T	1.52E+010	1.36E+012	2.12E+008	1.52E+010
	Orbital Speed	O=2aPi/T	O	4.43E-007	4.97E-009	3.19E-005	8.86E-007
	Galaxy Object Mass	M = O^2 x R/G	M	10.0	0.12	685.8	40.0

Figure 9.

Tabulation 9 shows:

1) The Earth units Base Case has settings which result in an object mass of 10.0 units.
2) When the distance to the black hole is increased by 5%, the value of G reduces, the time dilation T increases, and the object apparent mass drops to 0.12 units.

3) When the distance to the black hole is reduced by 5%, G increases, and T reduces, resulting in a 69 times increase in the object apparent mass.
4) The last column shows the effect of doubling the orbital radius relative to the Base Case. This increases the object apparent mass 4 times.

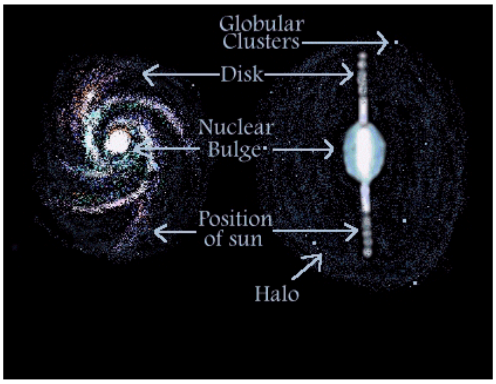
9. GALAXY STRUCTURE

Galaxies come in a wide range of classifications as discussed.[24] They can be broadly shown to fall into patterns described in Figure 10.[25]

Figure 10.

The globular star clusters are composed of ‘old stars’ while the open star clusters are composed of ‘young stars’. This suggests that there is a sequence which moves open star clusters to globular star clusters over extended time.

If we consider a typical open star cluster which includes spiral galaxies such as our Milky Way as shown, and reproduced in Figure 11.



In the light of simulations considered in Figure 8, we see that stars in the nebular bulge region experience a universally high G force. This also applies to some star formations associated with gravispheres of influence along the spiral arms. This significantly raises the apparent mass of the stars.

As the distance from these gravispheres increases between the spiral arms, G reduces, T increases and the inter arm apparent mass reduces.

Figure 11.

Towards the outer limits of the spiral arms the orbital radius increases which has the effect of increasing the apparent mass to a more modest extent, relative to the base case scenario position on Earth.

We noted previously that gravispheres appear to exhibit a level of mutual rejection as evidenced by the expanding universe observations. This was proposed as due to like charge repulsion and Electromagnetic Momentum (EM) are also responsible for keeping the spiral arms separated during the open star galaxy period.

The largest black holes are found at the centre of galaxies while smaller black holes exist on the galaxy arms. The centre of galaxies also have most mass resulting in gravitational attraction matching and dominating the repelling component forces.

However, where the concentration of gravispheres and their associated objects are high, the gravitational attraction force dominates EM force, resulting in an increasing nuclear bulge size, and a gradual absorption of the spiral arms. The eventual result is a globular star cluster.

On a universe scale, galaxies tend to move away from each other due to a more dominant EM force present at inter galactic locations, leading to an expanding universe.

10. CONCLUSIONS

1) Dark Matter speculation may not be valid if the Gravitation Constant G and Time Dilation T vary throughout the universe (G-T variations).
2) Considering G-T variations is a difficult estimation for any galaxy given the limited information generally available on the location of black holes, but some parameters are apparent:
   i) G will always be less than 6.693×10^{28} N`, because higher values result in the atomic destruction of mass.
   ii) The area of high G will be limited to the central part of the galaxy where black hole population is densest.

   iii) Areas remote from black hole influence such as between the arms will have very low values of G leading to low apparent mass values.
   iv) Galaxy arm separation is maintained through the influence of electromagnetic momentum.
3) G-T variations have significant influence over the apparent mass distribution at galaxies.
4) Over time, G-T variations can explain the genesis of galaxy shape change from spiral to globular.
5) The discovery of intense cosmic rays emanating from the Monoceros/Canis Major region of the sky adds considerable weight to the Gravimass interpretation of Black Hole V616 Mon.

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