

## Ether mediated space gravity: some considerations

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Space gravity look more in line with early thoughts of Newton. Cause for non-linear MOND type gravity is proposed.

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*I suppose this aether pervades all gross bodies, but yet so as to stand rarer in their pores than in free spaces, and so much the rarer, as their pores are less;*

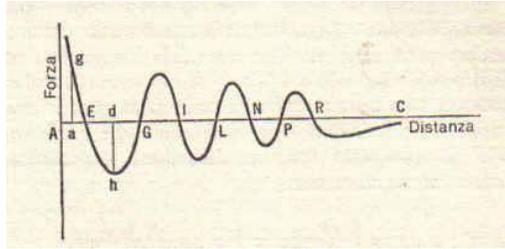
*I suppose the rarer aether within bodies, and the denser without them, not to be terminated in a mathematical superficies, but to grow gradually into one another; the external aether beginning to grow rarer, and the internal to grow denser, at some little distance from the superficies of the body, and running through all intermediate degrees of density in the intermediate spaces;...*

*4. When two bodies moving towards one another come near together, I suppose the aether between them to grow rarer than before, and the spaces of its graduated rarity to extend further from the superficies of the bodies towards one another; and this, by reason that the aether cannot move and play up and down so freely in the strait passage.*

*5. Now, from the fourth supposition it follows, that when two bodies approaching one another come so near together as to make the aether between them begin to rarefy, they will begin to have a reluctance from being brought nearer together, and an endeavour to recede from one another; which reluctance and endeavour will increase as they come nearer together, because thereby they cause the interjacent aether to rarefy more and more.*

From Isaac's Newton's letter to Robert Boyle (1679)\*

We see in these words a good draft of solution for "two body problem" in Aristotelian line and famous Boscovith's curve (fig.1)



**Fig. 1. Boscovitch curve**, likely showing stabilisation of two body system.

might be at least partially an illustration for this since inverse cube law of distance can be find in *Principia* (in connection of lunar orbit apsidal precession problem).

Passages about ether we can see in *Principia* and Third book of *Opticks* (Rosenfeld, 1969). In *Principia* Newton even attempted to explain the elasticity and movement of aether by relating aether to his static model of fluids. Ether as material carrier of angular momentum transfer „through the vacuum” appears in memorandum of Newton to Royal Society in 1675. Level of influence of Robert Fludd, Robert Hooke and others (Bennet, 1975) in this point have to be concretised. Thus Fludd had cited 3-rd century philosopher Plotinus (Wiki) about penetrative ether in 1659.

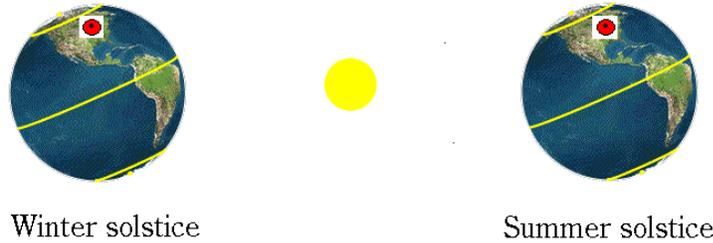
„Alchemical” and contradictionary writings of Newton regarding gravity arose due to several factors: a)complexity of problem, b)priority disputes, c)specific beliefs of Newton.

Thus in *Principia* Newton tells us in plain English, that “attractions are rather impulses” (Blavatsky, 1888), i.e. textbok “Newtonian gravitation” pertains to orbital motion only (Hegel, 1801, Wang)

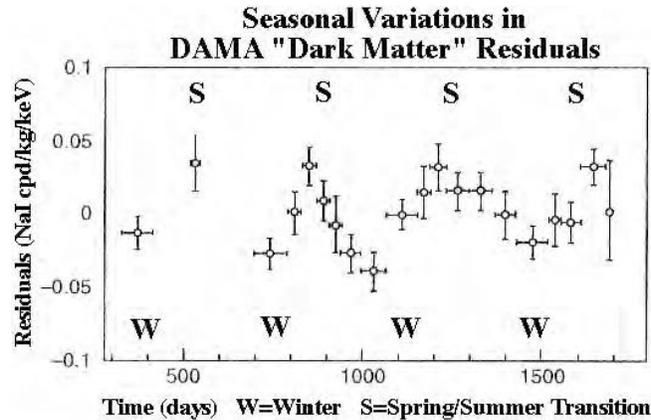
According to Heaviside, ether is element which unites electromagnetism and gravitation: „Let it not be forgotten that Maxwell’s theory is only the first step towards a full theory of the ether; and, moreover, that no theory of the ether can be complete that does not fully account for the omnipresent force of gravitation”(Heaviside, 1893) (with gravitation likely he means distant tangential action of solar vortex).

Hilbert-Einstein tried to cope with „fundamental mechanical facts” mathematically- physical body possess gravitational and electromagnetic fields and all this *somehow* causes acceleration of other bodies in vicinity (cf. Ebner, 2006). According to Weinstein (2016) ” Therefore, „Mach’s ether” of general relativity was a medium, devoid of mechanical and kinematical qualities, but the state of it was at every point determined by connections with the matter and the state of the ether in neighbouring places. This situation excludes action at a distance and brings back the ether in it’s new form („Mach’s ether”) as the general relativistic space-time. „Mach’s ether” is thus identical with the inertio-gravitational field”. So, if Einstein **defines** ether as non-mechanical, his space must be curved (doubtful postulate), otherwise, space might stay „cubic” as well. We know that ether is mechanical since solar rotation is connected with planetary motion according to Kepler’s laws. This was the cause for Michelson-Morley experiment claimed null result (cf. DeMeo, 2004).

Due to astronomical factors (fig.2) here is understandable differences in (ether drift) measurement results during different seasons (fig.3). Also dependence of results of ether drift experiments with elevation look logic.



**Fig.2. Astronomical cause for different ether drift experiment results during seasons.**



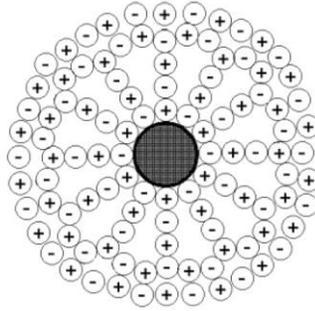
**Fig.3 Annual Variations (Northern Hemisphere) in "Dark Matter Wind", from the DAMA Project in Italy (after Bernabei, 2003).\***

As per Tesla (1931): „Only the existence of a field of force can account for the motions of the bodies as observed, and its assumption dispenses with space curvature. All literature on this subject is futile and destined to oblivion. So are all attempts to explain the workings of the universe without recognizing the existence of the ether and the indispensable function it plays in the phenomena.”

Tesla’s Dynamic theory of gravity has been reportedly worked out in 1893/1894 but never published. Fragmentary remarks of Tesla reveal some details of his thoughts (Allen):

- the luminiferous ether fills all space
- that the ether is thrown into "infinitesimal whirls" ("micro helices") at near the speed of light, becoming ponderable matter
- that when the force subsides and motion ceases, matter reverts to the ether
- Tesla's ether was neither the "solid" ether with the "tenuity of steel" of Maxwell and Hertz, nor the half-hearted, entrained, gaseous ether of Lorentz. Tesla's ether consisted of "carriers immersed in an insulating fluid", which filled all space. Its properties varied according to relative movement, the presence of mass, and the electric and magnetic environment. Tesla's ether was rigidified by rapidly varying electrostatic forces, and was thereby involved in gravitational effects, inertia, and momentum, especially in the space near earth, since, as explained by Tesla, the earth is "...like a charged metal ball moving through space", which creates the enormous, rapidly varying electrostatic forces which diminish in intensity with the square of the distance from earth, just like gravity. Since the direction of propagation radiates from the earth, the so-called force of gravity is toward earth.

For logical cosmology however we need stronger gravity. Thus Gorbacevitch (2004) explains gravitation with disturbances in ether media by physical masses (fig.4) and comes to **M/R** rule force idea (**M**- mass of central body, **R**- distance).



**Fig.4. Distortion of ether in vicinity of physical mass.** From Gorbacevitch (2004).

As it is known, that disturbances in ether might proceed in large distances without energy damping, idea seems plausible for solar system. It is less clear, can this be real for distance of 26 000 light years. In „gravitational” interaction of two bodies however masses are not multiplied so it is not clear, was this  $M/R$  idea meant for proof of faulty „Newton’s law of universal gravitation” or independent of it.

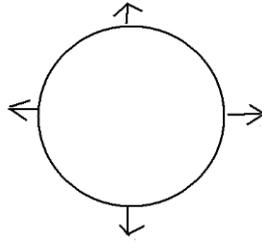
Let us examine relation between central mass and orbital distance of last known secondary it can control (table 1). In vortical celestial mechanics stars and liquid planets are active elements with powerful vortices; solid planets are passive elements.

Primary	Mass, M, kg	Secondary	Mean orbital distance, A, m	M/A
<b>Passive central body</b>				
(3122) Florence <sup>a)</sup>	$2.23 \cdot 10^{14}$	outer moon	$9.80 \cdot 10^3$	$2.27 \cdot 10^{10}$
90 Antiope	$4.15 \cdot 10^{17}$	S/2000(90) 1	$1.71 \cdot 10^5$	$2.42 \cdot 10^{12}$
45 Eugenia	$5.70 \cdot 10^{18}$	S/2004 (45) 1	$7.00 \cdot 10^5$	$8.14 \cdot 10^{12}$
87 Sylvia	$1.48 \cdot 10^{19}$	Romulus	$1.36 \cdot 10^6$	$1.09 \cdot 10^{13}$
50000 Quaoar	$1.40 \cdot 10^{21}$	Weywot	$1.45 \cdot 10^7$	$9.66 \cdot 10^{13}$
Pluto	$1.30 \cdot 10^{22}$	Hydra	$6.47 \cdot 10^7$	$2.01 \cdot 10^{14}$
Mars	$6.42 \cdot 10^{23}$	Deimos	$2.35 \cdot 10^7$	$2.73 \cdot 10^{16}$
<b>Active central body</b>				
Earth <sup>b)</sup>	$5.97 \cdot 10^{24}$	Moon	$3.84 \cdot 10^8$	$1.55 \cdot 10^{16}$
Uranus	$8.68 \cdot 10^{25}$	Ferdinand	$2.09 \cdot 10^{10}$	$4.15 \cdot 10^{15}$
Neptune	$1.02 \cdot 10^{26}$	Neso	$4.93 \cdot 10^{10}$	$2.07 \cdot 10^{15}$
Saturn	$5.68 \cdot 10^{26}$	Fornjot	$2.45 \cdot 10^{10}$	$2.31 \cdot 10^{16}$
Jupiter	$1.90 \cdot 10^{27}$	S/2003 J2	$2.90 \cdot 10^{10}$	$6.55 \cdot 10^{16}$
CVSO 30	$7.76 \cdot 10^{29}$	CVSO 30 c	$9.90 \cdot 10^{13}$	$7.84 \cdot 10^{15}$
DT Virginis	$4.00 \cdot 10^{29}$	DT Virginis b	$1.75 \cdot 10^{14}$	$2.28 \cdot 10^{15}$
Sun	$1.99 \cdot 10^{30}$	Oort cloud	$1.87 \cdot 10^{16}$	$1.06 \cdot 10^{14}$
Sagittarius A*	$3.20 \cdot 10^{34}$ <sup>c)</sup>	Sun	$2.46 \cdot 10^{20}$	$1.30 \cdot 10^{14}$

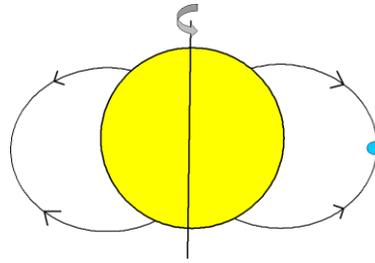
**Table 1. Proportional calculations.** a) - assumed, b)- partially active, c)-assumed (see DeMees, 2008, Alksnis, 2014, Alksnis, 2017)

It is clear, that “gravitational potential” of Mars, Earth, CVSO30 and DT Virginis should be stronger than we can conclude from their satellites. Are presumably watery vortices of Uranus and Neptune more effective as that of (metallic hydrogen) ones of Jupiter and Saturn?

As other space physical factors („charge field” (fig.5), vortices, „gravitomagnetic” effects (fig.6) should influence ether density

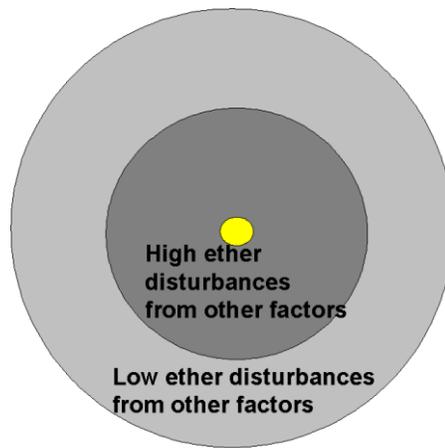


**Fig.5 Charge field**



**Fig.6 Gravitomagnetic effect**

we have similar situation as Milgrom has (Scarpa, 2006)- nonlinear gravity (Fig.7). Scarpa tells us that „The functional form for MOND was chosen so to have a  $1/r$  dependence of gravity at large radii”- i.e.- simply was pushed to match the data.



**Fig.7. Cause for nonlinear „gravity”.**

There are several possibilities for building a steady-state ether mediated space gravity concept:

- 1) ether is sucked in celestial body (and than possibly radiated in space in different mode),
- 2) ether is recycled trough the celestial body (gravitomagnetism analogy),
- 3) ether is recycled outside of celestial body (possibly „charge field” is involved).

Second possibility brings to certain geometric paralellism of space gravity with magnetism. Mathematical expression and understanding of space gravity however remain „lunatic” as a century ago.

It is presumably acting to half of surface area of celestial body- similarly as „tidal forces” and radial repulsion from central vortex.

„Invisible and intangible” nature of space gravity rises question- why it is necessary at all for understanding of celestial mechanics? We know, for example, that these are stellar vortices, not „gravity”, that really defines borders of zones of influence of stars (Daily Galaxy).

Two visible alternatives to central gravity in space are 1)vortical universe and 2)certain elastic space which can emerge from wiefs of Mach. Remedy for first alternative can be, as in Newton’s time, comets. Second alternative should face same difficulties ar „curved space” concept.

**Conclusion:** ether mediated space gravity idea can be elaborated into logical concept.

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\*- from James DeMeo website.