Dark matter? No- DesCartes and Kozyrev's universe

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Galactic rotation curves explained here as a result of interaction
between fast rotating central black hole and stars, which are non-keplerian
characters. Black holes are „black" not due to trapping of light-
rather due to changes in spectral peak flux

1. Good speculations and bad ones

If one wants to hear short answer to question „What went wrong in celestial mechanics?" it may indeed sound like: „brilliant guesses of occultists and early astronomers; than came mathematicians and made muddle". Thus early suggestion of Kepler (1596) that planets might be driven by rotating solar magnetic field sounds modern enough. (Alfven revisited this idea for the case of galaxy in 1937- cf.Smid).

„Magnetic philosophy" of Gilbert (1600) and that of mentor of Descartes- Beeckman (1588–1637) is said to facilitate acceptance of gravitation theory- because one „occult quality"- permanent magnet- and its action on a distance was known, Newton and his followers can convince scientific community that other one is possible. French astronomer Bullialdus in 1645 suggested that the Sun's force is repulsive at perihelion and attractive at aphelion- author of this paper has been pressed to reinvent same principle trying to explain elliptic motion more than 350 years later (Alksnis, 2015).

Guess of Newton, that value of central mass can be simply attached to Kepler's 3rd law (obtaining equation 2 from equation 1)

$$A^3 = P^2 \qquad (1)$$

$$M_1 + M_2 = A^3 / P^2 \qquad (2)$$

(were **A** is semi-major axis measured in Astronomical Units and **P**- orbital period measured in years, $M_1 + M_2$- masses of primary and secondary celestial bodies)

had better ground than average early speculations in field because of observational data of solar system objects. Before writing this, Newton should have thought about the way how revolution of central body affect orbital movement of secondary (mass-dynamic forces,

Fig.1 Ismaël Bullialdus (1605-1694)   **Fig.2. William Gilbert (1544-1603)**

gravitational vortex, gyrotation (cf.DeMees, 2003). Vortex idea should have strenghten DesCartes' line so understandably Newton does not want to get in details.

   Looking with today's eyes, no much harm with „Newton's modification of Kepler's 3rd law" has been done- as we can see from relation of masses of celestial bodies calculated and corresponding radiusses measured, suspicious relations are relatively rare.
Perhaps most important unmodelled effect comes from fast rotating liquid objects (Alksnis, 2014).
   We should not forget about this speculative facet of astronomy, of course. Masses obtained from calculations of this type remain relative; mass of Mars might be underestimated, as obvious remains of river erosion on it's surface (Fig.3) suggest.
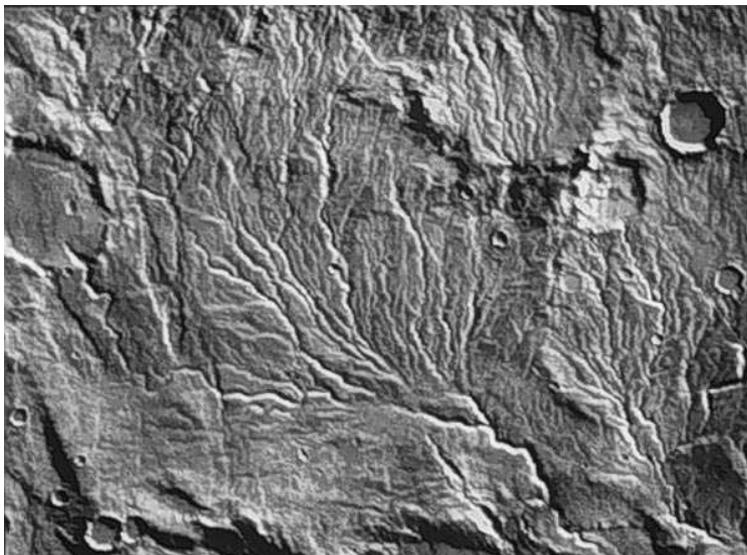

Fig.3. Presumed ancient river networks on Mars. *The scale is 160 kilometers across. Viking Orbiter image 606A56. Image processing by Brian Fessler (Lunar and Planetary Institute). Image courtesy NASA. Given fast spin of Mars its gravity should be underestimated. Can hydrodynamics help resolve this issue?*

   Our theory and measurements of gravity remain clumsy, but Newton hardly can be blamed for this.
We have been told, that Newton in fact do not suggested, that orbital movement of celestial bodies is due to gravity (Mathis). So suggestions like in fig.4 should have comed from followers of Newton.

Calculating the mass of a Galaxy
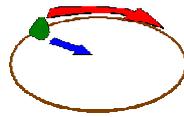
$$F = \frac{G \cdot m \cdot M}{R^2} = \frac{m \cdot rotational\ velocity^2}{R}$$

$$\Rightarrow \quad M = \frac{R \cdot rotational\ velocity^2}{G}$$

F = Force
G = Gravitational Constant
      (6.7×10^{-8} dyne cm^2 / g)
R = Radius of orbit
m = mass of object in that orbit
M = Mass (in grams) within the radius R

Fig. 4. Big speculation of mainstream science.

As has been noticed several times, such a strange equation ascribes effects not from gravity, but from gyrotation (which should be correct within certain range of parameters only). As distribution of stellar galactic rotation speeds against the distance from galactic centre was not Keplerian (Fig.5) an idea about dark matter was born in order to get above mentioned equation balanced (remember, Kepler do not suggested, that gravity should be equal to energy of orbiting body, nor Newton has).
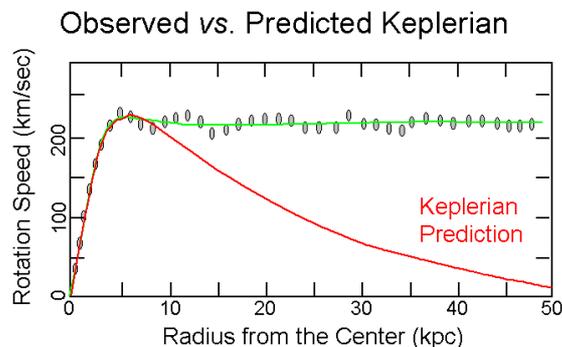
Fig.5 Example of galactic rotation curve (real is green vs Keplerian red). Source:
http://www.astronomy.ohio-state.edu

Recently Mathis1 has shown, that simply adding dark mass does not help to get galactic rotation curve flat. By the way he showed flaws in „Modified Newtonian dynamics" and disproved virial theorem as a pure speculation (Mathis1, Mathis2). Virial theorem was used as a „proof" for dark matter since 1930-ties (*Source: Wikipedia*). Most serious assault so far dark matter concept recieved from plasma cosmologists- in laboratory experiment a spinning spiral was obtained with flat rotation curve analoga (Peratt, 1986).

2. **Black holes in thinking, not in space**

Sun is supposed to move in nearly circular orbit around centre of Milky Way so people which think there is no big mass in the centre sound amazing. „Standalone" black hole is not easy to comprehend but this mystery vanish if we put several classes of exotic celestial bodies
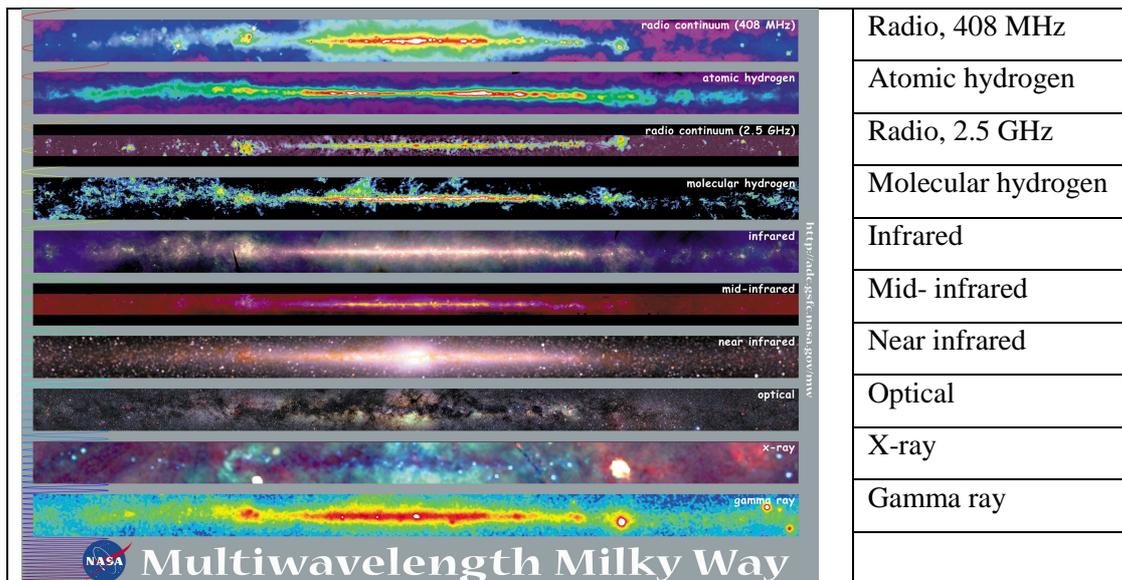
in line- fast rotating stars, quasars, centers of Seyfert galaxies and centers of average galaxies
(Table 1.)

Object	Relative mass, M☉	Spectral output	Hydrogen lines	Revolution speed example
Class A star	1.4- 2.1	Visible, infrared	strong	190 km/s
Class B star	2.1-16	Visible, UV	medium	210 km/s
Class O star	16-90	UV, less- visible	weak	190 km/s
Wolf-Rayet star	>20	UV, X-rays, less- visible	very weak or absent	Should be very fast rotating
Quasar	?	Radio, IR, visible, UV, X-ray, gamma rays.	strong	Should be fast rotating
Seyfert galaxy centre	10^8 (?)	Unusually bright, tiny cores that fluctuate in brightness. Most are powerful sources of infrared radiation.		Should be fast rotating
Milky Way galaxy centre	$4.31*10^6$ (?)	Radiowaves, infrared, gamma-rays		Should be very fast rotating

Table 1. Some physical parameters of exotic celestial bodies

Thus we see that stellar mass and rotation parameters strongly influence stellar energy output flux peak and easily can shift it outside of visible range. Looking to our galaxy from this angle (Fig.6) black hole in it's center is'nt black at all. (In this direction thinked also Wee-Foo).

Regarding estimation of mass of black hole Wikipedia tells us that „*The star S2 follows an elliptical orbit with a period of 15.2 years and a pericenter (closest distance) 1.8×10^{13} m from the center of the central object. From the motion of star S2, the object's mass can be estimated as 4.1 million solar masses*". DeMees (2006) showed that speed of stars like S2 is non-keplerian. This results in serious overestimation of mass of black hole (DeMees, 2008).

| Radio, 408 MHz |
| Atomic hydrogen |
| Radio, 2.5 GHz |
| Molecular hydrogen |
| Infrared |
| Mid- infrared |
| Near infrared |
| Optical |
| X-ray |
| Gamma ray |

Fig.6 Picture of our galaxy in different wavelenghts. Intensive gamma ray emmission suggest about nuclear reactions which are connected with fast rotation of gravitationally compacted mass**.**

3. Vortex theory- short overview for first 12 000 years of development

Even mainstream science do not deny, that galactic rotation shoud have some cause. This brings us to the vortex principle. Standard model in fact do not foresees, that world may have a macroscopic fine structure (best perhaps observable as „geoenergic grids" phenomenon). When however effects from this fine world structure manifestates, physicists speak about "fractals". It was noticed, that vortex can be viewed as a fractal of certain kind.

Several ancient cultures suggested that vortexes exist in space, on Earth surface and even in underworld (Ginzburg, 2007). Greek astronomer Anaximander chooses vortex as answer to question: how matter separated in the beginning of the world. DesCartes revisits space vortex idea centuries later; he was interested why and how planets retain relative stable orbits and different orbital distances- analogy with vortexes in water seem to be helpful here. Newton's attack on vortex theory was- 1)vortex needs to have energy income in order to survive and 2)periods of revolution in vortex vary as a square of the radius while Kepler's Third Law demanded that the square of the orbital period of a planet is directly proportional to the cube of the semi-major axis of its orbit. Looking with today's eyes, none of these objections were real: recently Leplae (2011) found that something like solar rotation created ether vortex can be detected optically. This „rotating medium" obviously is driving planets (according to Kepler's third Law).

Leibnitz in 1689 feels that for explanation of eccentric orbits of planets it is logically to assume, that latter are involved in two motions- orbital motion (in vortex) and radial motion which allows them move from layer to layer.

Swedenborg suggested in 1734 that "in every particle here is a force tending to spiral gyration" but it took two centuries till interest in remote effects, caused by rotation of bodies resumes (Bartels 27 day cycle in solar rotation and geomagnetic activity, and russian astrophysicist's Kozyrev's famous vision in Stalin's prison about energy, coming from spinning objects). During 20th century vortex theories were mainly associated with esoterics (cf. Piippola).

Vortices has been an element in Alfvens plasma cosmology (Mikhailovskii et al, 1987) and even string theory may not function without them (Boulatov and Kazakov, 2000). Finally vortex principle has been put in the foundations of the world- russian scientists Akimov and Shipov imagined that non- disturbed physical vacuum contains dense packed particles which each contain two vortical particles with opposite spins and that polarisation of physical vacuum takes place when it's symmetry has been broken and electromagnetic, gravitational or torsion fields appear (Shipov, 1993). Strong microcosm-macrocosm relation contain also Universal Vortical singularity principle of Wee-Foo. When Martin Tajmar and colleagues rediscovered „extreme gravitomagnetic fields" in 2006 (first noticed by russians half a century ago) which were some 18 orders of magnitude stronger than GR predictions it was clear, that spooky vortex concept in cosmology has obtained flesh and blood. Like for ancients vortex was a natural form for visiting underworld, today it is believed that several countries experiment with warp drives trying to get into „wormholes in spacetime" (Aym, 2012).

4. Guidelines for driving the galaxies

According to both ancient and DesCartes philosophy an order comes out from chaos-emerging of vortex in certain conditions is energetically favorable.

Repulsive forces of vortical spin prevent accumulation of all matter in one place. At the same time mentioned repulsion do not totally prevent growth of central mass (as we can see in case of black holes, „eating" stars).

Similarly, recent data from *Voyager* 1 spacecraft from the outer border of solar system clearly match DesCartes „waterworld" picture (Schuster):

„*Voyager* has reported solar winds suddenly dropped by half, while the strength of the magnetic field almost doubled, and those values then switched back and forth five times before they became fixed. "The jumps indicate multiple crossings of a boundary unlike anything observed previously," a team of *Voyager* scientists wrote in one a study. *Voyager* did detect the expected increase in galactic cosmic rays but found at times the rays were

moving in parallel instead of traveling randomly. "This was conceptually unthinkable for cosmic rays," Stamatios Krimigis, a solar physicist at the Johns Hopkins University Applied Physics Laboratory in Laurel, Md., told the Los Angeles Times"*.
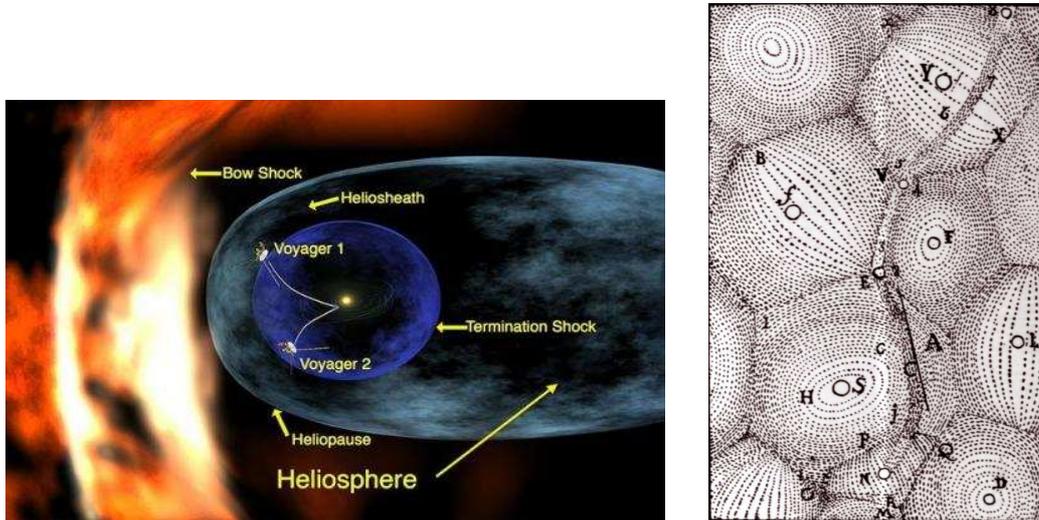

Fig.7 Left: *Voyager 1* **spacecraft obviously reached a boundary in space, envisioned by DesCartes in1644 (right).**

In connection of this not suprisingly is to read also about link of solar activity and changes of rotation speed of Earth (Currie, 1980) which has been brushed-off by mainstream as „impossible".

Mystery of flat galactic rotation curves vanish if we remember that stars are not passive elements in gyrotation process.

Thus when fast spin of black hole starts to accelerate not only orbital motion but also revolution of stars, a serie of vortexes emerges (Fig.8) which influence eachother (also Kozyrev's vision). Forces of repulsion from vortexes (explained by non-mainstream gravitomagnetism) eliminate „winding problem" and keep stars on a certain distances. Only direction to which angular momentum from spinning objects can be transferred without large resistance is- to outer part of galaxy.
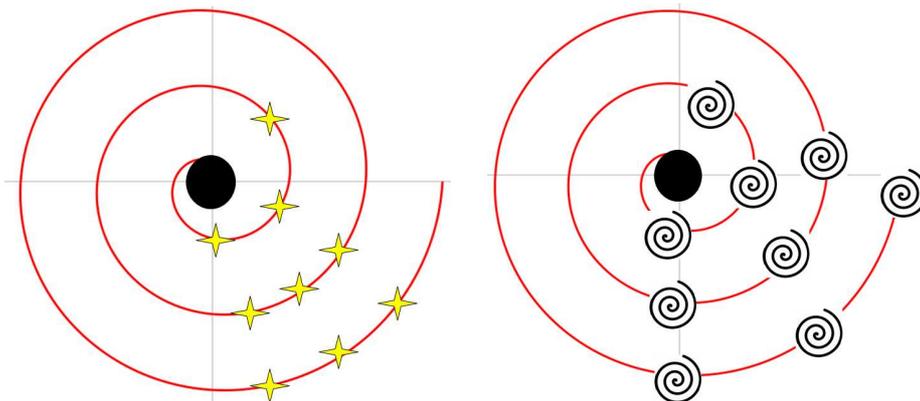
Fig. 8. Stars in galaxy- left- in the moment of emerging of central vortex, right- development of local vortexes.

So finally galaxy start to rotate with a certain medium speed; understandably stellar rotation speed near to black hole is diminished (Fig.5) because they feel resistance from spinning galactic stars.

Fig. 9. René Descartes (1596–1650)   **Fig. 10. Nikolai Kozyrev** (1908–1983)

We can roughly compare gyrotation power of Sagittarius A* black hole with that of our Sun taking in account methodic errors of determination of diameter and mass of black hole. Let us set for our analysis that diameter of black hole is overestimated by 10% and mass- some 430 times which results of mass of black hole- 10 000 solar masses and radius of it- 20 million kilometers (table 1.).

Parameter	The Sun	Sagittarius A*
Mass	1 M☉	10 000 M☉
Radius	0.695 million km	20 million km
Equatorial rotation period	24.47 days	11 minutes (www.solstation.com)
Relative angular momentum of revolution $0.4MR^2\omega$	1	$2.65 * 10^{10}$ ☉

Table 1. Comparing some solar data with that of Sagittarius A*.

If gyrotation of Sun can drive 0.002 **M**☉ (planets), than proportionally gyrotation of Sagittarius A* can formally drive $5.3 * 10^7$ **M**☉**.** How many stars Sagittarius A* has to drive? As astronomers calculate number of stars in galaxy using wrong analogy from fig.4 (Odenwald, 2014), real number of stars in Milky Way is not 100 billion but several orders less. Thus fast spin of black hole within our analogy can drive galaxy. Real masses of black holes can be on the order of thousands of solar masses, as DeMees (2008) recently suggested, using other calculation method.

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