Research Logic and Gravitation,
Or why the moon does not fall like an apple.

I have already committed a crime in which the theory of gravitation, which puts me a little in danger of being interned in a madhouse. Albert Einstein

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We have dissected the world to get to know their constituents, but to understand them, we need to put it together again.

1. The problem of the lack of force

It is said that Newton discovered his gravitational law from the square decrease of gravity, when an apple fell into his lap. In truth, his law is based on the exact observations of Tycho Brahe and Johannes Kepler, using the heliocentric world view of Copernicus. If, however, drops of rain fall on a slanting glass plate as on the roof of my green house, they do not run vertically downwards, but describe a path which can not be foreseen, along which they carry with them further drops which are in the vicinity.

Figure 2: Rain drops on glass pane

Consequently, a body does not act solely on the gravitational force, but a further force must act which can not be separated from the gravitational force but which acts perpendicularly to it. Any non-rectilinear motion can be decomposed into two forces perpendicular to each other. In the example of raindrops, one can assume that these are slightly electrostatically charged and causes the dipole of the water that the raindrops put on the glass plate. Now the electrostatical attractive forces between the regent drops to the gravity are comparatively small, since they become visible only when the glass disk has an inclination of about 20 degrees. Then the earth's gravitational force acts only about a third of the rain drops bouncing off the glass plate. But what if the water drops are more electrostatically charged? Everyone has already experienced a thunderstorm and knows the power of lightning. Now we have two forces, the Newtonian and the Coulombian force. The difference between both is only in the order of magnitude which is 36 orders of magnitude. Both Newton's law and the law of Coulomb describe a

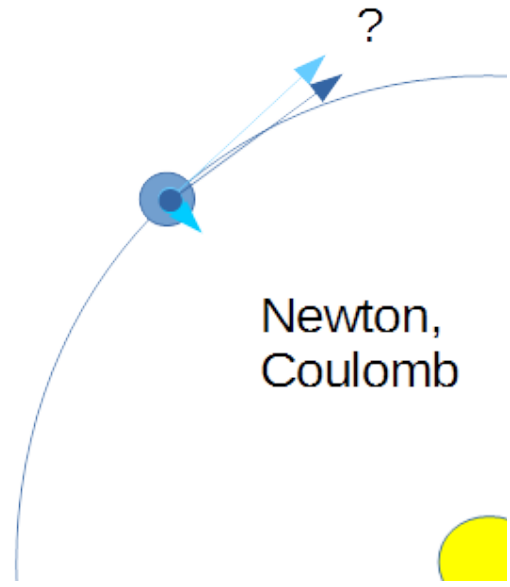

Figure 1: Circular motion

force acting between two stationary bodies and becoming weaker with the square of the distance. Both forces can be measured with a torsion balance. The moon had long since fallen like the apple to the earth, there would not be another force that we have not described. In order to drive an arc, each driver must turn on his steering wheel so that he is not carried out of the curve. Each circular motion in the plane, as the movement of the raindrops on the glass sheet is described by two forces which are mutually perpendicular, as Figure 1 and 2 illustrates. What force should that be? Antigravity? That would act just the opposite of gravity, thus clearing the directed force to the center. A force is required which is perpendicular to the pulling force. The resulting force from both guides one body around the other on a circular path.

It is one of the greatest inconsistencies in physics that one divides the forces into electric force and gravitational force, as well as weak and strong nuclear force. Measure the force in Newtonmeter and can only distinguish it according to its direction of action. Why then this strange distinction? Perhaps because the cause of the force has never been properly understood. We have learned that force is the product of mass and acceleration. Everyone has the idea of a mass. We experience the acceleration when we start with our car. It is the change of a speed. But what is mass? We determine masses by comparison with a standardized primary kilogram. But this does not explain mass. Everything we know about the mass is due to mass spectrometry. It gives us the mass of the smallest building blocks of matter because of the fact that all masses carry a positive or negative electric charge, which in the normal case almost cancel out, but are separated in the magnetic field according to their mass. The fact that one can measure the electric current and the magnetic field in the mass spectrometer allows the conclusion to the exact mass.

So we need the knowledge of electrical engineering to answer the question of the second force. There it is the Lorentz force, which is perpendicular to the Coulomb force. For astrophysics, there is no specific equation describing this perpendicular force. Astrophysics try to explain this difficulty with the erroneous space curvature of the general relativity theory. However, there are no curved spaces, only curved surfaces. Masses have a volume that is measured in a space that is tensed by three independent directions. Consequently, forces can only be distinguished from each other by their strength and the three mutually independent directions. If the astrophysicists were engineers, they might have noticed that according to their equations the moon would have fallen. Thus, the theory of relativity conceals only the problem and ends in a dead end. We must turn back and think about it all.

2. The electrical approach

The ancient Greeks already knew the four aggregate states of matter: solid, liquid, gaseous, and fiery, and knew that the fire came from heaven. Prometheus was punished by Zeus because he had stolen it from the gods and brought man. Only Christianity has banished the fire to hell in order to create a heavenly kingdom for the good souls in which they are to praise God. How deeply false faith is anchored in the minds of men. Albert Einstein's work "*On the Electrodynamics of Moving Bodies*" [1] rescued this belief by stating that the observer and object were interchangeable for

physics. He described this as a principle of relativity. The idea was inspired by Einstein's favorite philosopher Arthur Schopenhauer [2].

Today we know that light arises as a consequence of the recombination of separate electric charges, and almost everything we see in the sky at night consists of the fiery state of aggregation which we call plasma, according to Irving Langmuir. Plasma is an ionized gas, which begins to light up when the ions are recombined. We know plasma in everyday life as a flash, as an arc, as a flame in the fireplace or as a fluorescent tube. Even our TVs use plasma screens. We can study the behavior of the plasma very well on the plasma globe invented by Nicola Tesla in 1894. It shows an unsteady turbulent behavior, as is also observed in turbulent liquid flows. The plasmic state of matter depends on pressure and temperature, the most diverse forms of appearance which we know.

In "*Research Logic and Particle Physics*" [3] we had dealt with the inductive conclusion and its delimitation, and found that it is admissible because the world is self-similar across large areas. But you can not rely on the fact that the conclusion is always right because similarity also includes differences. Eric Lerner was also concerned with the scaling of plasma properties in his book "*The Big Bang Never Happend*" [4] and found that some plasma parameters over large scale ranges are constant and others are not. This allows us to transfer results from the laboratory to the cosmos and to apply the laws of magnetohydrodynamics (MHD) from the laboratory to the cosmic plasma. Everything that glows and turns in the cosmos is consequently in the plasma state. These ideas are not new and have been supported since the middle of the 20th century by the measurements of the cosmic probes. One of the pioneers in this field is the Swedish Hannes Alfvén, who published a book entitled "Cosmical Electrodynamics" in 1950 [5]. In Germany, the Leibniz Institute for Astrophysics in Potsdam (AIP) is concerned with cosmic magnetic fields, regardless of the public. Magnetohydrodynamics is described with six partial differential equations in which the following parameters occur: mass density, plasma velocity, pressure, electric current, magnetic field, electric field, gravitational acceleration and light velocity. The solving of such differential equations is usually only possible by means of simulation on large computing systems, where a cubic lattice is placed over the object to be examined and the calculations are made for each lattice point as a function of its environment.

Everything that glows and rotates in the cosmos is in the plasmic state, and therefore has electrodynamic causes and no relativistic, as Einstein asserted, when he "sat" on an electron and thus no longer perceived the magnetic forces. And only from the electromagnetic spectrum we receive immediate information, not from the forces that prevail there, including the Newtonian force, which for a century occupied the thinking of the astrophysicists. But in order to get an idea of the cosmic movements, it is necessary to identify further forces on the basis of existing structures. A look at the history of the discovery of the cosmic movement sequences should remind us that it was Copernicus who discovered that the Earth is revolving around the sun and that with Hubble's knowledge that our solar system is embedded in the Milky Way Motion of the planets do not move on closed paths, but describe spiral paths. In the course of the twentieth century the realization grew that the cosmic structure is net-like and that the galaxies hang in the threads of this network. The threads consist of plasma strands between the nodes. Such a plasma sequence is characterized by the Birkeland current, a plasma spiral, as shown in Figure 3. This plasma spiral is named after the

Norwegian plasma pioneer Kristian Birkeland, who has elucidated the electrical cause of northern light and imitated in the laboratory at the beginning of the 20th century.

We see on this spiral three forces, the **Coulomb force**, which is responsible for the current flow, the **Lorentz force**, which acts perpendicularly in the direction of the tangent to the magnetic lines, and a third force, which in turn is perpendicular to the Lorentz force. There is currently no designation for this force. It results from the pinch effect and should therefore be referred to as a **pinch force**. It is the responsibility of the plasmas to contract and twist. Now, Newton's force works exactly in the same direction, and there is nothing that could effect this force except mass with its charge. So you can conclude inductively, that the stars and planets are dust particles in these streams and these are entrained by these three twisting forces. It follows:

Newton's ***gravitational force*** is the ***pinch force*** in a ***Birkeland current.***

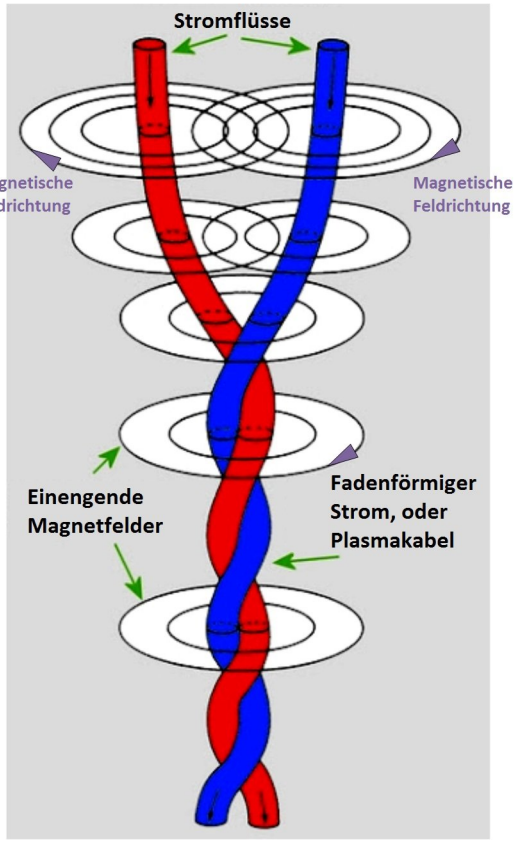

Figure 3: Birkeland current

At first glance, it is surprising that gravity should be the cause of the interaction of the magnetic fields of the planets with the magnetic field of the sun. On the other hand, it is obvious that a Birkeland current creates a Binary-star system that rotates around a common center of gravity in the current. Considering the Birkeland current in section, as shown in Figure 4, we see that the Lorentz force is perpendicular to the Coulomb force, which causes the current flow and acts tangentially to the magnetic field lines. The pinch force, which contracts the two currents, is again perpendicular to the Lorentz force, which eventually leads to the twisting of the two parallel current conductors. If a small body moves in this magnetic field, it describes an elliptical spiral around the two currents, which are located in the two focal points of this ellipse. In the case that one current dominates the other, only one current will remain, and the ellipse will only rotate around the one focal point of the ellipse. The result is the well-known perihelion motion that we observe on Mercury, as shown in Figure 5. We must not forget that the sun is a positively charged body [6] that moves, which, of

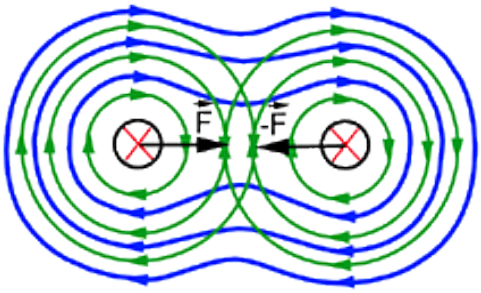

Abbildung 4: Magnetic field of two current-carrying conductors

course, produces a magnetic field, and the moving planets also have magnetic fields. Induced currents in the interior of the earth are probably also the cause of continental drift on the earth.

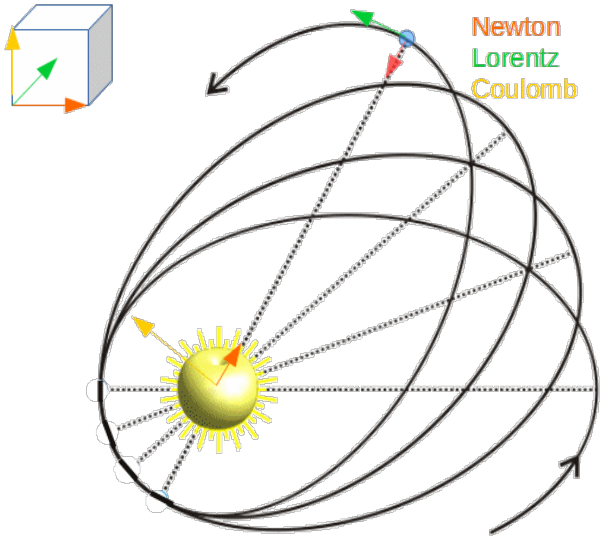

Figure 5: Spiral path in a three-dimensional force field

Thus the rather complex planetary motion is produced by the three mutually perpendicular forces described by Coulomb, Newton, and Lorentz. To understand the movement of celestial bodies, we should not want to be considered separately or perhaps want to negate one or other of them as solid bodies over a hundred years has been done as foolish since Einstein's e*lectrodynamics.* Even if, in certain circumstances, one or more phenomena of nature are more prominent, you must never forget the context simply because the other phenomenon of nature is treated in another textbook page.

But there is also a serious argument against this thesis. If the forces described above were to continue, the rotation of the Earth would have to be accelerated.

3. What the spectra of galaxies tell us

Both Newton's law and the Coulomb law describe a force field whose force decreases with the square of the distance, and the Lorentz force in the magnetic field equals charge of mass times the vector product of velocity of mass and magnetic flux density. The Lorentz force thus associates the Newtonian with the Coulomb force. All three forces act at the same time on the above-described regent drops, and the Coulomb force and the Lorentz force become stronger the higher the degree of ionization of the moving droplet and its velocity.

Just as the raindrop has an electrical potential, it can be concluded that when the earth moves in the force field of the sun, the same laws must apply between the both bodies. Since Einstein's theory of gravity is connected with the geometry of space, and with this "madness," as he himself defined it, he set the standards of the theoretical physics of the twentieth century, the view of the connection of the forces has been lost. And their electrical cause has been completely disregarded by the astrophysicists, which is a matter of course for an analyst, since mass spectrometers separate the masses from a mass flow of constant velocity by their atomic weight. For the earth one can determine the mass flow, how charge and magnetic flux density divide, however, is unknown. The fact that the ground charge potential is zero is an arbitrary determination. Compared to the universe it is not zero. This is proved by the sprites and goblins, huge electrical discharges from the ionosphere into space.

Newton has introduced the gravitational constant in his law to correlate the measured values. Coulomb has done the same for the charge. On the other hand, we know that every moving charge produces a magnetic field and the mass growth at real velocities [7] comes from the magnetic field. On the other hand, the magnetic field separates charges, which counteracts rapid recombination, as shown in Figure 6.

Consequently, the force equations of Newton, Coulomb and Lorentz can not be regarded as universal, separate laws, but must always be related to the degree of ionization of the mass, as determined by magneto-hydro-dynamics .

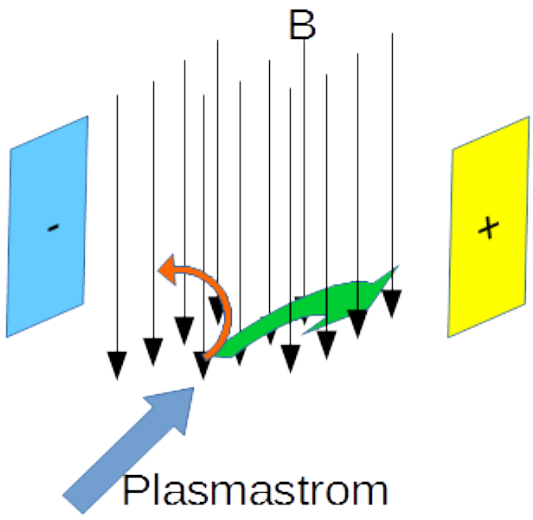

Figure 6: Charge separation in the magnetic field

Thus it is also understood that the gravitational constant is one of the most imprecise natural constants of the whole physics. It depends on the degree of ionization of the heavenly bodies. Since a constant current flow consists of protons between the sun and the earth, the degree of ionization of the bodies is approximately constant. Both the sun and the earth have a magnetic field whose influence is reflected in the motion of the heavenly bodies. In addition, the sun has a positive potential towards the earth, otherwise we would not record the radiance that the aurora borealis give us at the poles.

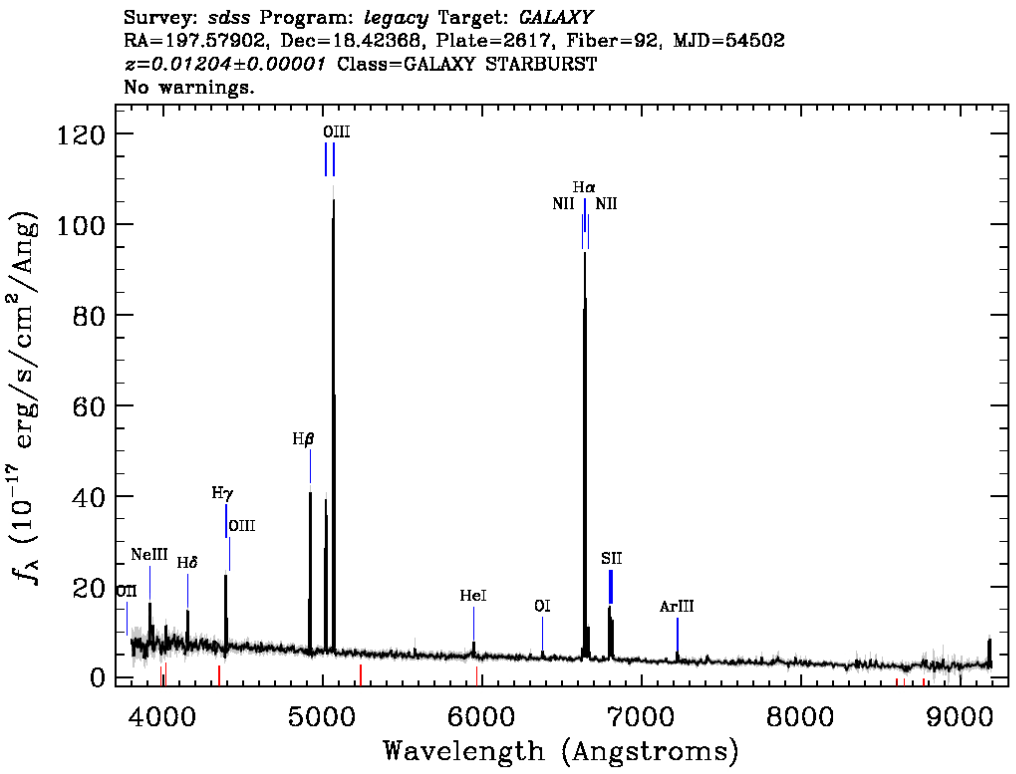

Figure 7: Spectrum of a precursor to the galaxy *Reference: SDSS Data Base Release7*

The greatest mass in space is posed by hydrogen, as the spectra show, and it consists only of a proton and an electron. How can it be ionized? There are several possibilities such as energy supply in the form of temperature, magnetic fields or radiation. From this a plasma stream is formed which does not yet recombine. This means that this current is dark. It is dark matter if you want to use this concept in a demystified sense. Only when the protons recombine with the electrons does the characteristic line radiation emit as can be seen in Figure 7. Apart from hydrogen lines, there are often ionized oxygen, nitrogen and noble gases, also a few sulfur ions. These ions build up the magnetic field to ionize the hydrogen. Ions of metals are not yet found. The sulfur ions here have the lowest ionization energy with 10.3 eV, whereas Helium with 24.5 eV has the highest. Hydrogen has an ionization energy of 13.6 eV. The sulfur ions are here the ones responsible for the magnetic field to produce additional ions. They act like ionizing nuclei.

How quickly a plasma stream recombines depends on its density. The lower the density, the longer distances a proton must cover until it can capture an electron that moves about 300 times faster. Stars have not yet formed in this state. The resulting galaxy is only visible as a blue nebula in

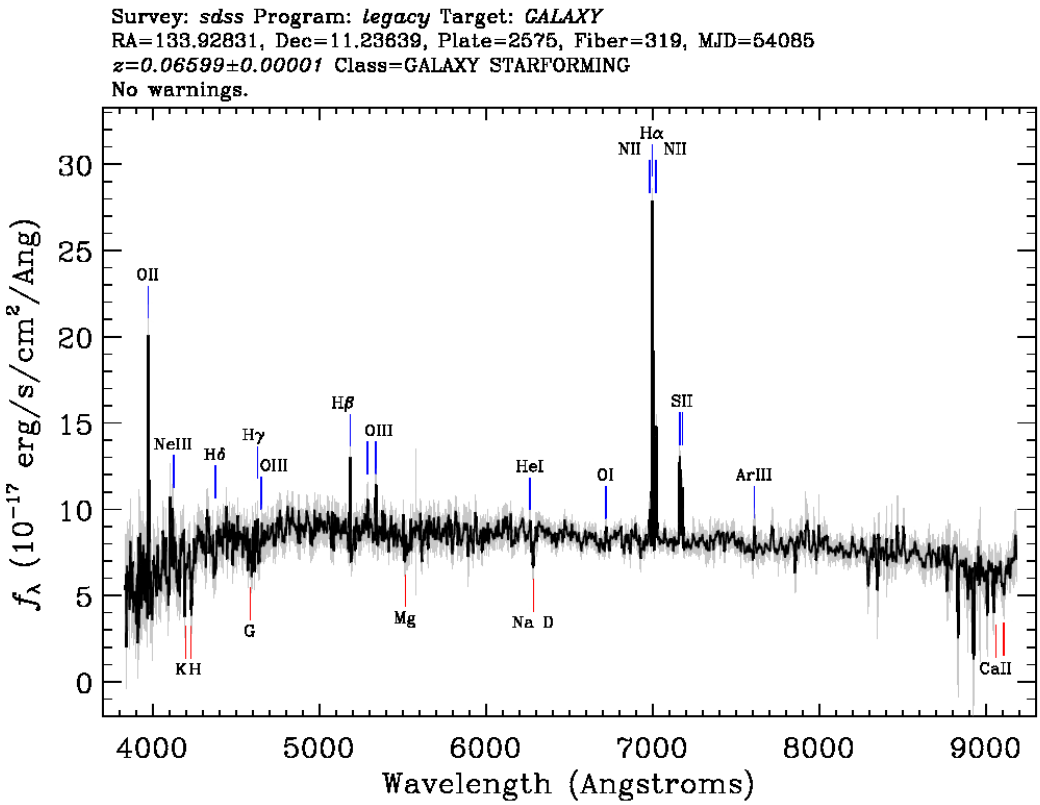

Figure 8: The star formation process has begun, the metallicity of the spectrum increases.
Reference: [SDSS Data Base Release7]

the telescope. However, due to the current flow, in particular of the fast electrons, magnetic fields are formed, which are responsible for further charge separation. The fusion process begins with higher-order elements that accumulate in current turbulence, which become more numerous as the center of the galaxy becomes more concentrated. The first stars are created and they carry a positive

potential. The center of the galaxy begins to take on a yellow color, the typical anode glow. In the spectrum, this is reflected by a reversal of the slope of the background light at the H_β line, as shown in Figure 8. The metallicity of the spectrum increases. The elements K, Na, Ca and Mg can be found in absorption. These elements are distinguished by a particularly low ionization potential, from 4.3 to 7.6 eV. Class A and Class F stars. In the center, a plasma focus is formed, not a black hole [4]. The plasma focus spins into the rotation axis of the galaxy matter jets. When you look into the eye of such a galaxy, you notice a very high luminance. The spectral lines are extremely widened and shifted to the red end of the spectrum. These centers were regarded as quasi-stellar objects and were banished to the edge of the universe in standard cosmology.

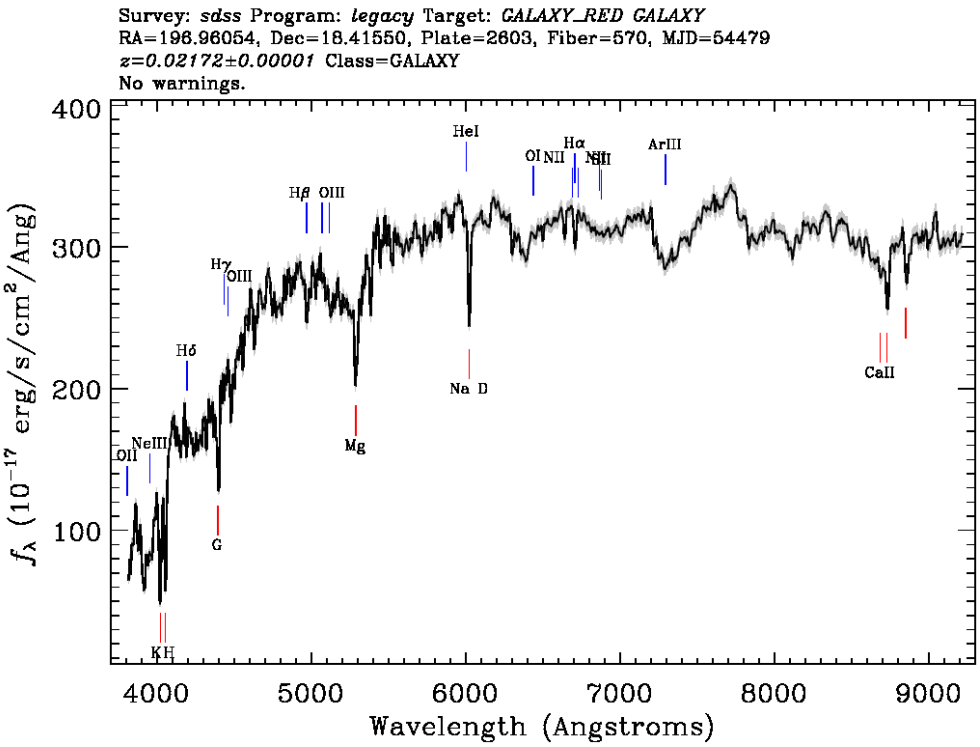

Figure 9: Typical spectrum of an elliptical galaxy Reference: SDSS Data Base Release7

The rotational speed of galaxies can be measured by using the Doppler effect. From these measurements, a curve in red as shown in FIG. 10. The blue curve results from the calculation according to the gravitational law, as it works in our solar system. This difference can not be explained by the standard cosmology. This is the reason for the hypotheses with the mystic black holes and the dark matter, which would have to be present in the galaxies to infer the difference between observation and calculation. Antony Perrat [8] modeled two twisting plasma currents on a supercomputer using the law of magnetohydrodynamics and obtained precisely the velocity distribution observed in Figure 10 as the red curve.

The separation of the masses works similar to the mass spectrometer in galaxies. The heaviest metals are found in the center, and the electron density increases towards the edge of the galaxie, which also explains the high velocity of matter there, as shown in Figure 10. . The characteristic cathode light of the gases in the galaxies and the anode light of the galaxy core are formed. The

anode light is visible in the spectra of galaxies as a more and more developing background light, which over time overlaps the line spectrum. The spiral structure of the galaxy slowly dissipates and becomes an elliptical galaxy, because the original magnetic fields disappear because of the extinction of the plasma current. The rotation curve of the elliptical galaxy is expected to approach the blue curve, but this will be difficult to measure as the spectrum of an elliptical galaxy looks like Figure 9 and the spatial resolution of elliptical galaxies is not exactly large. It is to be assumed that they are smaller than the spiral galaxies, because in the meantime a condensation took place and the fusion to the iron in most stars should have taken place. Hydrogen can still be recognized in absorption. At the places where the electron suppliers were to be expected, almost nothing is to be seen.

We have seen above that the Lorenz force is responsible for the rotation. When mass flows, it will maintain its speed because of its inertia, as long as no other force acts on it. A deflecting force will not change the angular speed. However, the heavier masses drawn inward are more braked than the outer ones.

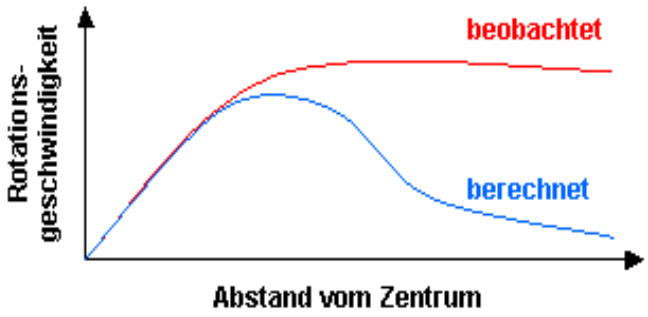

Figure 10: Rotation speed of a spiral galaxy
real - red; calculated - blue

The red and blue curves in Figure 10 have the same increase. Since, however, the ion current becomes weaker with the depleted hydrogen, and thus also the external magnetic field, the rotational speed is also increasingly decelerated at the edge of the galaxy, so that the spiral arms become longer and longer. In doing so, the masses are separated, so that a thermal core forms in the spiral galaxies over time, which is becoming more and more condensed over time. The lower the electromagnetic fields become, the more the spiral structure dissolves and the galaxy moves into an elliptical galaxy.

In Figure 11, the evolution of the galaxies is from left to right. The influence of the electromagnetic forces fades, as can be seen from the increasing thermal character of their spectra [9]. With the fusion of the atoms to heavier units up to the iron, the magnetic permeability and thus the acting forces between the individual heavenly bodies also change. Thus, a rising magnetic permeability can compensate for the dwindling electrical forces and stabilize the movement.

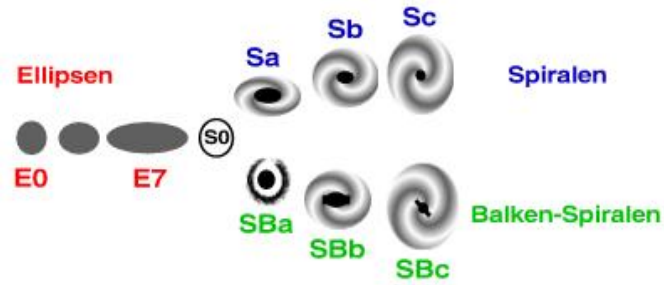

Figure 11: Hubble classification of the galaxies

In addition, the dipole effect of the individual atoms is due to the negative shell and the positive core [10] with further cooling and further densification of the masses. We have looked at the forces in the far-field. On the Earth, they act perpendicular to its axis of rotation as temporal forces. However, the gravitational forces of the Earth's surface act radially towards the center of the earth. This difference must be considered.

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