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Dependance of Celestial Bodies Growth with Space's Density

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Abstract

We show that all celest bodies, stars and planets, form and grow in the same conditions sucking hydrogen or materials of space. That able us to calculate their age. Inversely, knowing the age of the sun, we can calculate the density of the space around the solar system.

Keywords: Gravitational force; Density of space; Sun; Planets; Age of celestial bodies

Growth of Celestial Bodies

Stars form and grow from hydrogen in space. It is Newton's force of attraction that ensures their supply of raw materials. Stars have no definite limits; they extend to infinity. Only the density that decreases with the distance to the center distinguishes them from their environment.

The stars exert a force of attraction on their satellites, which is well known. But they also exert this same force on everything that constitutes their environment and therefore on the hydrogen of space, which seems to be ignored by current physicists.

Indeed, we can see that there is no theory to explain the relationships that celestial bodies have with the space around them. For example, a physicist announces that: *"the galaxy NGC4569 lets out 95% of its interstellar gas which makes it sterile!"*,[1]

The force of attraction of a celestial body causes all matter to be drawn to its center. It is this force that makes us have a weight, that our feet exert pressure on the ground. It is this force that causes the atmosphere to weigh and exert pressure on the soil or on the surface of the seas.

Thus, each layer of the atmosphere of a celestial body is compressed by the weight of the upper layers. If they are compressed, their volume decreases. *This decrease in volume creates a void that is immediately filled by the upper layers.* This process is continuous and is exercised to the limits of the atmosphere, to the limit between the atmosphere and space but also to the center of the star.

Conversely, it can be considered that the force of attraction of the lower layers attracts the outer layers. Thus, when the highest layer of the atmosphere is compressed by the force of attraction of all matter that is at lower levels, its volume decreases, which leaves room for the hydrogen of space. This description is as accurate as the previous one. The amount of hydrogen sucked in by the atmosphere of a celestial body is proportional to its mass and to the density of hydrogen in space[2]. The growth rate of a celestial body is calculated in a simple way. It depends only on the mass of the celestial body and the density of space. The force of attraction is Newton's force which is expressed:

$$F = GM\mu / a^2 \quad (1)$$

Where ***G*** is the gravitational constant; ***M***, the mass of the central body, **m**, the mass of a particle at the distance ***a***. Thus, a particle of mass μ will undergo an acceleration:

$$\gamma = GM / a^2 \quad (2)$$

and travel for a period of time ***t*** a distance:

$$d = \gamma t^2 / 2 = GMt^2 / 2a^2 \quad (3)$$

towards the center of the star. During this time ***t***, it is therefore a volume:

$$V = Sd \quad (4)$$

of hydrogen that will be attracted. *S*, being the surface of the celestial body of radius ***a*** in contact with space.

$$S = 4\pi\ \mathbf{a^2} \quad (5)$$

Thus, the volume of hydrogen sucked in by the body will be:

$$V = 4\pi\ \mathbf{a^2GMt^2/2a^2} = \mathbf{2}\pi\ GMt^2 \quad (6)$$

This volume is independent of the radius of the body, it depends only on its mass. If the density of the hydrogen in space is ρ, the mass of hydrogen sucked in each second will be:

$$M_{(t)}(kg/s) = V\rho = 2\pi GM\rho t^2 \quad (7)$$

Thus, a celestial body will have a rate $\boldsymbol{T_x}$ of growth:

$$T_x = (1 + 2\pi G\rho t)^t \quad (8)$$

And its mass as a function of time *t* will be:

$$M = M_0(1 + 2\pi G\rho t)^t \quad (9)$$

The growth rate of all celestial bodies depends only on the density of the space around them. Thus, we can calculate the age of the sun as a function of the density of space (Table 1):

Density	Age
3.10^{-7}	9.96
10^{-6}	4.98
$1{,}6.10^{-6}$	3.32
2.10^{-6}	2.5

Table 1: Age of the sun expressed in billions of years according to (8) as a function of the density of the space.

This calculation seems consistent. We obtain an age that corresponds to that estimated by current cosmologists with a density of space of 10^{-6} kgs^{-1}. But it is possible that the density of space, at the time of the formation of the solar system, was greater than that taken into account in these calculations.[3]

Are these simple and logical calculations more far-fetched than the idea that leads us to think that the Universe was born 13.623 billion years ago?

But the very idea of a *birth of the universe* is based only on the interpretation of the *redshift* observed in light from distant galaxies. This phenomenon can be explained differently when we know the mode of propagation of electromagnetic radiation[4]. It is obvious that the theory of the birth and expansion of the universe could only have arisen from ignorance of this mode of propagation. Phenomena for which there is no explanation have always generated *beliefs* and *fabrications.* The age that is currently considered to be that of the universe is based neither on scientific observation nor on philosophical evidence. The idea of an infinite universe in time and space is equally acceptable.

All celestial bodies that have an atmosphere are therefore always growing.

The presence of an atmosphere is necessary because it is the variation in volume of the gaseous atmospheric envelope that creates the suction of hydrogen. Newton's force of attraction thus creates the curvature of space proposed by Einstein. In the absence of an atmosphere, the force of attraction of the celestial body can attract hydrogen from space but cannot hold or compress it. The star is dead, its growth is interrupted.

Growth of the Planets

It is likely that the growth of planets falls under the same rules that we have just identified for the growth of stars. Thus, considering that their mass increases according to the formula (9) above we obtain the duration of their growth according to their current mass (Table 2).

Astre	Mass	Duration
Sun	2E+30	4,982
Mercure	3,30E+23	3,867
Venus	4,86E+24	4,059
Earth	5,96E+24	4,073
Mars	6,42E+23	3,914
Jupiter	1.90E+30	4,485
Saturne	5,68E+26	4,399
Uranus	8,68E+25	4,265
Neptune	1,02E+26	4,276

Table 2: Duration of growth of the bodies of the solar system.

Of course, these results are hypothetical. However, I have to comment on them and perhaps even justify them.

First of all, let us note that the age of the planets obtained by this calculation is different from that adopted by current scientists. They believe that the sun and the planets are the same age, that the entire solar system was formed from a block from a solar *nebula.* It is however likely, and the above calculations seem to confirm it, that each celestial body started its formation according to local conditions that had to be different depending on the distance to the center of rotation, depending on the temperature and the nature of the locally available materials.

Astrophysicists have determined the age of the sun. They came to the conclusion that it was 4.567 billion years old. I do not know on what basis they were able to make this calculation but I do not dispute it. My means of calculation do not allow me such an accuracy which is why, with the formula (9), I obtain 4.982 Ga for the sun and all the other durations appearing in the Table 1 are based on this result.

We see in this Table that the growth of the 4 outer planets is 500 to 700 million years lower than that of the sun. In fact, Jupiter only began its formation when the sun was 500 million years old, Saturn 90 million years later. Then come Uranus and Neptune who began their formation when the sun was about 700 million years old.

We also see in this Table that the growth time of the Earth is the longest of that of the 4 terrestrial planets. But this duration is smaller than those of the 4 outer planets, which indicates that the formation of the outer planets began before those of the terrestrial planets.

We will see below (§- *Water of the earth*[5]*)* that our planet is currently continuing its formation. We can therefore conclude, and observation supports this conclusion, that the other terrestrial planets have now ceased to grow. Thus, Mercure would have stopped its growth 200 million years ago, Venus would have done it 15 million years ago and Mars 160 million years ago if we admit that all terrestrial planets started their growth at the same time.

Two hundred million years ago the sun had a mass about 16 times less than its current mass but Mercury was perhaps closer and did not support such promiscuity. Its atmosphere is practically non-existent and its weak magnetic field (1% of the Earth's field) attest that it is no longer possible to absorb hydrogen from space and therefore to continue its growth.

Venus also got too hot 15 million years ago because the mass of the sun was becoming very close to what it is today ($1.62.10^{30}$ kg). The temperature of its atmosphere excluded the presence of a mechanism for melting hydrogen in the gas state with any chemical element that could condense. Unable to absorb hydrogen, the mass of Venus remained stable.

It seems that the core of Mars is almost totally amorphous (absence of magnetic field[6], very weak volcanism) which characterizes an absence of growth. These conditions occurred 160 million years ago probably because this planet, too small, could not retain a dense enough atmosphere.

It must be remembered that the temperature of the core (magma) of the stars is the result of the pressure that the outer layers exert by Newton's force of attraction. This temperature has nothing to do with the proximity of the sun. On the contrary, with regard to Mercury and Venus, for example, the heat of the sun meant that their atmosphere did not allow the ***condensation*** of elements made with hydrogen from space. As we saw in the previous paragraph without this constant supply of hydrogen the mass of the celestial body remains stable, the magma freezes, cools. The strength of the magnetic field decreases. The star dies.

On the other hand, it is likely that the outer planets will continue to grow and that they will make good use of the collected hydrogen. Jupiter, for example, could become a star of mass comparable to that of the sun in 500 million years... But the sun will also have gained fat in this period of time.

In the above, I admitted that the planets all feed on the same substance, hydrogen, and that the density of this hydrogen is homogeneous for all space in the solar system. However, it is obvious that the nature of the materials that make up the planets is not the same from one end of this system to the other. However, I also admitted that local density is independent of the nature of the materials that space contains. The presence of pebbles or rocks does not significantly change the density because, as seen in the rings of Saturn for example, these materials are very dispersed. On the other hand, the nature of these materials led to very different planetary formations, which assumes that the *vortex* in which the planets formed contained different materials depending on their distance from the center of rotation. It is likely, however, that the density of these materials was the same regardless of their nature, which led me to ignore this problem in the calculations above.

Conclusion

The above is very speculative, I agree. However, my calculations are based on the obvious Newton's law of universal attraction. I did not make any particular assumptions, based solely on observational facts.

Thus, the results obtained here can serve as a basis for a better understanding of the phenomena that govern the formation of planetary systems.

End notes

1. See Science & Life, May 2016.
2. Proposal made to Ac. Sc. By Note from Feb. 2014,
3. It should be noted that planetary systems are formed from elements heavier than hydrogen, probably in the residues of a nova that has already synthesized these elements because as we will see below young stars cannot do it.
4. See in *A&M, p. 63*, the mode of propagation of electromagnetic radiation.
5. In *Atoms & matter*, Iliade édition, 2010.
6. Recall that the magnetic field is produced by *piezo effect* when the magma is in motion. The absence of a magnetic field indicates that the magma is frozen, solidified.