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## The Geocentric Model of the Earth: Physics and Astronomy Arguments

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### **Abstract:**

*Several astronomical observations have shown the presence of numerous failings in heliocentric model such as Mercury retrograde motion, cosmic rays and Perseids meteors. Numerous researchers are talking about these topics. Because there is no empirical evidence that the Earth actually orbits the sun, astronomy observations/ geophysics arguments provide proofs for the steady Earth and the Sun's motion. The main contention of the paper is to demonstrate the flaws in gravity and relativity, and to disprove the alleged motions of the earth that for so long time has been unjustifiably taught.*

**Keywords:** Earth, Sun, revolution, physics, retrograde motion, solar system

### **1. Introduction**

Understanding cosmos occupies an extremely significant position in scientific researches. Since antiquity, the Earth is considered stable without any motion and it is the center of this universe (geocentric model). However, Nicolas Copernic, Kepler and Galileo findings show, that the Earth is not stationary (heliocentric model) and that it has nine motions. This heliocentric model, which leans in illusion, takes the example of a ship state leaving the port. In this case, the ship appears stationary (in reality it is in motion) and the port (fixed on reality) move from his initial position. Then, starting with a hypothesis, we try to explain an observation by insisting on the theory accuracy. This led to suggest illogical theory which becomes a reality, forgetting that it is an assumption. Since the inception of this mathematical theory, it has confronted several problems leading to propose new hypotheses to justify its validity. First, there has been an explanation of the four seasons' alternation by the assumption of an annual Earth spinning around the Sun in an elliptic orbit. Second, there has been an explanation of the planet's motion around the Sun by suggesting the existence of gravitational force between different planets. Third, the justification of night/ day alternation has been proposed by suggesting the Earth daily revolution around its imaginary axis. In addition, the temperature change is explained during the four seasons via the postulation of 23.5 ° inclination of the Earth rotation axis to its orbit around the Sun. Also, the assumption of a huge distance between Earth / Sun unites the mathematical theory and physical knowledge. Furthermore, sunspots are justified by suggesting that the Sun rotates around itself. Moreover, the Moon rotation is supposed monthly, not daily, around the Earth from west to east (contradict with observation). And suggesting that there was fixed stars' motion: according to Einstein the entire universe is in permanent motion. For some years, scientific researches have evolved towards a more coherent understanding of nature and universes. So, several physicists and astronomers have demonstrated the presence of several flaws in earlier theories.

[1-5] refute the works and the methodology (inductive arguments) of Newton for the reason that is a "chimera" not related to any observation. According to [6-12], they show the presence of numerous gaps in Newton and Einstein laws "*Relativity is fundamentally wrong...*" [6]. Hence, the heliocentric theory, and all related theories, based only on theoretical proposals have never been argued by terrestrial observations of the sky or through satellite images or Moon [13] said: "*However, if we stay and observe it for a few hours, it will not change its position in the sky. This is strange behavior, since here on the Earth we are used to seeing the Moon moving across the sky from east to west*". Thus, all the complex calculations and "imaginary" assumptions, which are not related to any veracity, are only solutions to the problems faced by this theory. The purpose of this paper is to prove through a variety of arguments, taking into account all the previous flaws of the heliocentric model, the stationarity of the Earth in the universe and the Sun spinning around it.

### **2. Methods**

Falsifiability of hypothesis or theory is an intrinsic possibility to prove it to be false. In order to prove Earth stationarity in the cosmos and Sun's motion, aside bibliographic data, a profound review of two complementary fields is used. On the one hand, we have used physical/ geophysical arguments (hydrodynamic laws, atmospheric characteristics, mass-energy equivalence formula, neutrinos speed, gravity formula, objects kinematics). On the other, we have employed self-observations (daily surveillance of the Moon positions,

daily observation of the sun/Moon shifting, surveillance of the shadow direction, surveillance of sunrise time at the equinox, observation of the star's position, laboratory experiment).

### 3. Result and Discussion

#### 3.1. Bibliographic Data

First, Michelson-Morley experiment in 1887 [14] shows the stationarity of the Earth. A light ray is split into two perpendicular component paths, A and B have an equal length. Path A is in the direction of Earth motion and path B at a right angle to A. It is expected that, due to Earth motion, the time to travel path A would be less than the time to travel path B, but no such interference is noted. The two light beams arrived at the same time proving then the Earth stationarity.

Second, [15-16] show the existence of particles traveling faster than the light speed. When he experienced his system of wireless transmission of energy, [15] transmitted longitudinal electric waves through the interior of the Earth, which propagate at a speed of 1.6 times the light speed. Based on satellite data from Pioneer 10 and 11 [16] shows the existence of an "anomalous" Doppler shift in the radio signals received from these satellites. The Iraqi nuclear physicist [17-18] demonstrated that energy isn't related to the mass and he proposed a new mass-energy equivalence formula ( $E = m \cdot b \cdot c$ , where  $b$  is a new derived universal constant in term of speed units and equal 0.2014 of light speed). The works of [19-23] in the quantum cosmology show the existence of a faster than light speeds. Physicists at the CERN laboratory, [24-27] prove the existence of superluminal particles called neutrinos travel faster than the light speed. The mass-energy equivalence formula ( $E = mc^2$ ) is defined when "c" is constant and it is the maximum speed of light. Furthermore, when "c" is a constant, energy must be proportional to the mass, but in the case of neutrinos, we are in the opposite condition. The neutrino mass equal 0.06 electron volts (eV), which is far less than a billionth of the mass of a proton ( $1.67262E^{-27}$  kg =  $0.938273$  GeV) =  $1.06959E^{-37}$  kg and energy =  $10^6$  GeV [28-34]. As shown above, "c" is variable, mass is not related to energy, this formula must be revised. Since the general relativity formula, physically unproven and incompatible with quantum mechanics, is false, there are not any justifications for the Earth spinning.

Third, NAZA scientific findings shows that Sun has a revolution not around Earth but around the Lactic Way Galaxy and it has a solar apex (the velocity of the Sun's orbit around the galaxy is about 220 km/s and thus its orbital period is about 240 million years [35]. This apex is an imaginary point in the Hercules constellation, near the bright star Vega (the speed of the Sun = 20km/s). According to this fact, heliocentric model (Sun is fixed in solar system) is rejected.

As well known, all planets have a retrograde motion. If the Sun has an attraction force on planets to make them spinning, we never perceive this motion kind. According to the heliocentric model, planets motions have constantly a counterclockwise direction around Sun exempt Venus and Uranus (clockwise direction) [36]. The observation of this retrograde motion and the rotation direction lead us suspect the entire heliocentric theory.

Also, depending on the planets arrangement in the solar system, Mercury is at a distance of 58 million km (0.39 AU) from the Sun and Pluto in 6000 million km (39 AU). Since the Sun's attraction force reaches Pluto, and in order to make it spinning, the Mercury rotation cannot be held regarding the magnitude of the gravitational influence. At such condition, the planet Mercury should have been swallowed by the Sun.

#### 3.2. Sun / Moon Observations

A daily observation of the Moon for a lunar month shows the existence of different rising positions. Currently, the crescents progress during each lunar month is explained by the Moon monthly revolution around Earth. But, this is unacceptable because we see every night Moon during the first half of lunar month rising from its appearance point and continuing revolution to the West until disappearance under the West horizon. During the 14<sup>th</sup> night, the Moon goes across the sky from the extreme East to the extreme West. During the first and the second half of lunar month, the Moon rises from West and East respectively, but its propagation direction is always from East to West. This is clearly visible during the first and the second half of lunar month for the earliest and the latest half of night correspondingly. If the Moon follows the Earth rotation from West to East, we no longer observe these rising positions during the lunar month. The record of the Moon position, daily at the sunset, during a lunar month allows drawing its analemma. Indeed, thus obtained analemma shape shows the "eight number" providing then the Moon kinematic. Such configuration reflects the Moon intertropical journey. If the Moon completes a single revolution around the earth monthly (heliocentric model) the analemma must be elliptical. Then, regarding the analemma shape and observations, the Moon revolves around the earth daily. The diversity of the rising positions is explicated then by the following cycle:

The Moon starts its journey from the equator → goes to the Capricorn tropic → go back to the equator (14<sup>th</sup> day) → goes to the Cancer tropic → come back to the equator for a new cycle.

A direct observed phenomenon allows proving the earth stationarity. This one consists to register the position of the moon and the sun, in the sky, during a lunar month after an eclipse event (when sun, moon and earth are aligned). Let us take the case of the heliocentric model. If the Sun is fixed at a distance of 150M km from the earth, the moon has a backward motion with a slow velocity at 340000 km and the Earth have a forward move with a more important speed than the moon. With time progress, the angle  $\alpha$  between the line of the earth/sun and the earth/moon increase rapidly contrasting with observation. For the geocentric model where the earth is steady, the sun, and the moon have a forward motion. Sun speed is lightly fast then the moon and the distance between celestial bodies is more convincing. With time progress, the angle  $\alpha$  between the line of earth/sun and earth/moon increase regularly (the shifting angle is 11,9° daily) in agreement with sky surveillance (**Fig.1**). During the first half of the lunar month, the moon position in the sky is behind the sun and distance between them begin tiny then it increases progressively until the fourteen day of the month where it gets

at the maximum (the sun at the extreme west and the moon at the extreme east). During the second half of the month, the moon position in the sky is in front of the sun and angle between them decrease regularly until the sun reach the moon at the twenty-eighth day. At the new crescent this cycle starts again.

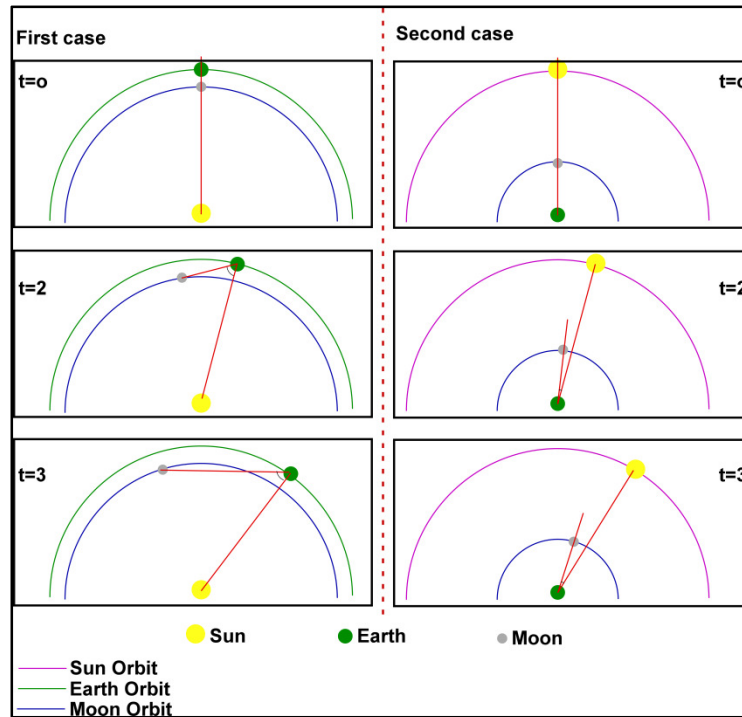


Figure 1: Position of sun and moon in the sky

Another observation allows suspecting the heliocentric model. In the same meridian, time is identical especially at the equinox when the Sun position is on equator: The Sun rises typically from south to north of the meridian at an equal time. If the Earth axis has a 23.5° tilt to the orbit, in the same meridian, Sunrise must have an important time difference (Fig. 2). This time difference presents a 23.5°. Then, according to the Earth tilt, longitude line passes from the two poles form 23.5° to the equinox Sunrise line. Subsequently, the last one must pass through the extremity East and West of polar circle at north and south hemisphere respectively. This situation is never observed. Therefore, if we suppose a perpendicular position of Earth to the Sun at the equinox, Sunrise time will be identical on the same meridian. Since the Sunrise time at the equinox is identical for the countries located in the same meridian, 23.5° inclination of the Earth axis is rejected.

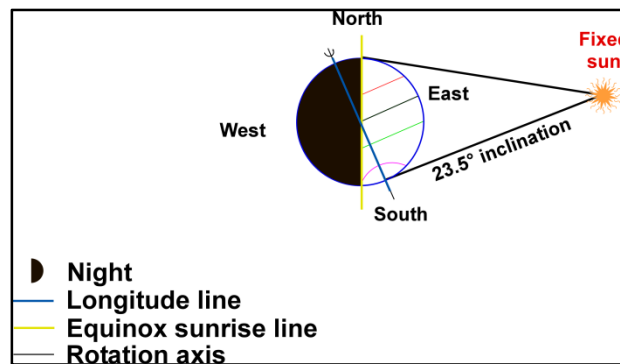


Figure 2: Variation of Sunrise line if Earth has a 23.5° inclination axis

For insurance, the surveillance of shadow direction as seen in figure (3) shows its relationship with the Sun position as following:

- The Sun revolves around Earth (Earth is fixed); the object shadow direction shows a corresponding with the direction of solar rays (Fig. 3, S1): this case is observed.
- If we check the heliocentric model (experienced in the laboratory), the object shadow direction formed a diverse angle with the solar rays (Fig. 3, S2): this case is never observed.

The observations of shadow direction show that Sun revolves around Earth.

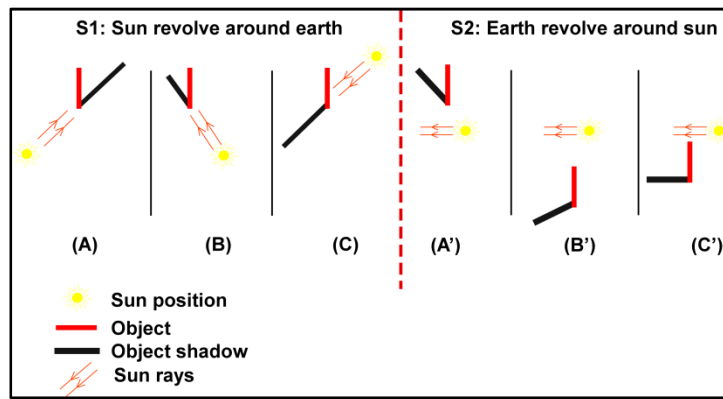


Figure 3: Variation of shadow direction

3.3. Critic of the Earth Characteristic in the Theoretical Orbit

First, in climatology, if the Earth is nearer to the Sun about  $1^\circ$  this causes its burn and if it moves away the Sun about  $1^\circ$  this causes glaciations of all the Earth. The imaginative orbit of the Earth around the Sun, along the year, is elliptic (different diameters) (Fig. 4). This assumption means that the Earth revolves around Sun with different distances, but nothing is observed (not total burn or glaciations during the year). This fact explains that the “imaginative” orbit does not exist and that Earth is fixed in the space without any motion.

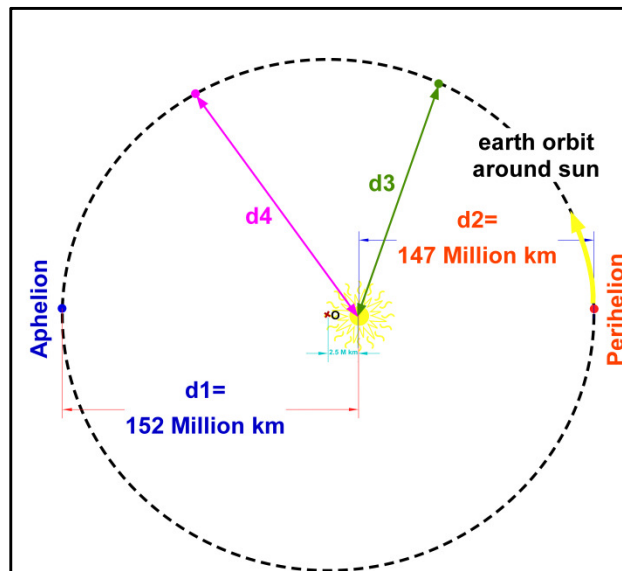


Figure 4: Variation of the distance Earth/Sun in the elliptic orbit

Second, Earth has a volume, a weight and a revolution speeds (theoretical). In the motion dynamic, objects speeds are related to its weight. If the Earth has its different motions, the falling of the thousands of asteroids and meteors on the Earth every day must influence the motions velocities. These objects cause the decreasing of the speed and everything will be attached to the Earth surface, the duration of night/day will be longer. But nothing is observed and every day the numbers of meteors increase without any changes. In addition, in the heliocentric model, seasons result from  $23.5^\circ$  inclination of the Earth rotation axis to its elliptic orbit around the Sun. But, the defect of this model is the position of winter and summer in the orbit. Winter appears when Earth is in perihelion (closer position to the Sun); the temperature decrease is attributed to the Earth speed which become faster (34.145km/s) than the average speed (29.829km/s). Summer appear when Earth is in aphelion; the temperature increase is attributed to the Earth speed which is slower (28.851km/s) than the average speed. Theoretically, this supposes the presence of self-power for the Earth to enhance or reduce its velocity. This suggestion has no argument to admit. Then, this conflict allows the suspicion of the heliocentric model validity. Furthermore, if the earth revolves around the sun we must observe a clear parallax of the Sirius star, its size must be larger when the earth is closer. If we take the position of the earth in its orbit around the sun during the autumn equinox, after six months it will be in the opposite position (spring equinox) at a distance equal to 299 Million kilometers. Thus, an observer on Earth should observe places in the remote universe of 299 million km from its initial position. Subsequently, he must observe this star in larger dimensions and a different angle. Such situation never detected demonstrates the stability of the earth and refutes the heliocentrism theory. The calculation of gravitational force between Sun /Moon and Earth/Moon shows that this interaction is more important between Sun/Moon. Since, Sun/Moon attraction ( $4,38082E+20 \text{ N.m}^2/\text{kg}^2$ ) is higher than Earth/Moon ( $1,98E+20 \text{ N.m}^2/\text{kg}^2$ ), the Moon cannot spin around the earth and we never observe its evolution steps. This situation interferes with the observation.

For more elucidate, the polar star is a stationary since it indicates the geographic north for peoples in Earth. The observations of sky at night in different times (for example, an hourly basis) show the same position of this star without any motion contrasting with the other stars. Such fact proves that Earth is steady.

Also, if the Earth spins around the Sun in 365 days, its velocity must be 108.000 Km/h, this value is 84 higher than the atmospheric sonic speed (1200 Km/h). Taking into account the atmosphere characteristics, a direct consequence of this velocity is to perceive a huge sound (sonic boom) caused by this motion. But these sound never heard only if supersonic plane across the sky. This situation could be interpreted by assuming that the atmospheric layer acts as an insulating body. This hypothesis cannot be admitting since we listen to various types of sounds. As consequence, the inexistence of sonic boom testifies the stationarity of the earth.

### 3.4. The Objects Kinematic

First, if the Earth has an attraction force that is capable to hold and attach the atmosphere during its rotation around itself, the Sun and the other motions, we cannot detect the wind. Nevertheless, observations show the presence of various categories of wind from light air up to gale wind (the speed can overstep 50 knots). This fact confirms the absence of Earth attraction.

Second, coastal dynamics researchers show that direction and wave height are closely attached to the wind. If Earth spins around itself with a speed of 1670 km / h we must find a single direction of the wave propagation which will be necessarily East (dominates direction and speed). But oceanographers have shown different wave propagation directions. The presence of a numerous directions of wave's propagation, when the Earth is rotating, assumes a higher carrying wind speed. This assumption is not convincing since extravagant wind speed of 1670km / h (910 mile/h) destroys any sort of life on Earth rapidly. Regarding the Beaufort scale, the impact of a wind speed exceeding 70 mile/h on sea/ continental state causes catastrophic damage in the infrastructure and trees. By comparison of speeds we cannot admit any motion for the earth.

Third, the presence of balancing rocks and stacking stones in lakes and rivers in numerous countries for several times is a powerful tool to reveal the earth stationarity. If the Earth rotated around itself, the Sun, the galaxy, the apex and for the universe expansions, these rocks would move in any direction. But, the immovability of these rocks for a long time shows the validity of the geocentric theory.

In the hydrology science, water is maintained stable in lakes / rivers if there are not any atmospheric perturbations. The observation of enormous water bodies stable conflict with the Earth motions. This reality reveals that Earth is steady.

The kinematic of the space rockets collide with the earth supposed dynamic. If we assume that the Earth makes different motions at the same time, it means it must travel far from the point of the rocket launch. Then, when the mission is accomplished it cannot find the position of the Earth which would be further away. In addition, the maximum speed of a rocket is 28000 km / h but the Earth's speeds are much more important (108000 km/h, 220km/s). Since the speeds of the Earth are greater than the rockets one, they can never return to Earth. But, observations show that the rockets return quickly and easily to the Earth. Moreover, the satellites are located at a fixed distance from the Earth, if they move a meter we cannot pick up any signal (for example: satellite dish are placed in a well determined direction, GPS). Then, the obtaining of these TV channels diversity and the positioning at any times interfere with the Earth dynamics (revolves around itself (1670km/h), around the Sun (108000km / h), around the galaxy (220km/s) and for the expansion of the universe). Assuming the earth motions, these satellites must change their velocity permanently, to conserve its positions to the Earth. But, satellites don't have a self-power allowing them to enhance or reduce their speed. Such result, testifies the earth stability.

Moreover, if the Earth has it different speeds motions, we cannot obtain a high detection pictures from geostationary satellites or from the Moon. In fact, at such high speeds, the taken pictures must be blurry. The observation of diver's high detected earth images conflict with these motions.

Finally, on any clear night, a shooting star can be seen in the sky about every ten minutes (for example the Perseids meteors observed between 11 August and 13 August 2014). It is commonly observed that many more meteors are seen in the early morning hours, between midnight and sunrise; then, they are seen in the evening between Sunset and midnight. If the Earth has different motions, we cannot observe these meteors and cosmic rays every day bombarding the Earth's surface. This situation could be explained by the existence of the Earth in the same position in the cosmos.

## 4. Conclusion

In conclusion, various physics arguments and astronomy observations show the stability of the Earth in the universe and the sun, the moon, the stars and the planets motion around it. Then the heliocentric model must to be rejected. On the contrary, the revision of the geocentric model will be necessary. Consequently, the Sun revolves around Earth daily in 23h 56min 4.1Second from East to West.

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