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FALSE SYMBOL OF SCIENCE: FLIGHT TO THE MOON

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Abstract

Flight to the Moon (1969), according to many researchers of the history of science and civilization, is the greatest scientific and technological achievement of the human race. Thus, a centuries-old dream came true: man left Earth for the first time and stepped on another celestial body. Stunned by the achieved success, the scientists set themselves new, more difficult goals, which seemed feasible to them: conquering the planets of the solar system and migrating life to them. And even more and even harder: going beyond the solar system, deep into Cosmos. Analyzing exactly this, undoubtedly, extraordinary success of human thought, and extending it to the scale of the Cosmos, we conclude in this paper that it is a “false symbol”: The moon is so close to Earth that man's flight to the moon is not a flight to Cosmos. We have shown by calculation that, due to the constants that God has determined perfectly precisely and according to which the Cosmos functions (and which, regardless of the development of science, we cannot change), man will never travel through the Cosmos! Thus, the circle is closed: science has led us to God's instructions as eternal truths given in the Holy Books: God ordained the earth for man's life.

Keywords: space travel; Flight to the Moon; Apollo 11; speed of light; known Cosmos;

INTRODUCTION

One of the great discoveries of modern science is the fact that science can deceive us, that “ideas about the world that we came to the methodology of modern science can be wrong, and in a perfectly concrete and verifiable sense” [1]. Equally, a successful solution to a specific problem cannot necessarily be generalized to other similar situations. A good example of this is the flight of man to the moon, which has become a symbol of the success of modern science, and which is often cited as the beginning of the “conquest of the Cosmos”. By sending people to the moon, the technological culmination of the development of human civilization was achieved: people first stepped on a celestial body other than the Earth. Intoxicated by the success they achieved, they set themselves new, more difficult goals, which seemed feasible:



conquering the planets of the solar system and migrating life to them, and even more: possible travels outside the solar system [2].

Here we want to show that the flight to the moon is such a small way compared to the cosmic dimensions that we have no right to talk about space travel and that, regardless of the constant development of science and technology, man will never travel through Cosmos. For those of us who believe that God created the world, this conclusion about the limitations of human life on earth is expected because God in his Instructions to people speak about it:

„It is He Who hath created for you all things that are on earth; Moreover His design comprehended the heavens, for He gave order and perfection to the seven firmaments; and of all things He hath perfect knowledge“.

The Holy Qur-an [3]

And said, Hitherto shalt thou come,
but no further: and here shall thy proud waves be stayed?

The Holy Bible [4]

1. PROBLEM STATEMENT

After World War II (WW2) the focus of science and technology shifted from Germany to the United States. This was especially reflected in the development of the nuclear and missile programs. At the very end of WW2, when it was clear that Hitler would lose the war, the hunt for German scientists began. The United States had the best prey: they captured top scientists in Germany's missile program (led by Wernher von Braun) and about 100 ready-made V2 rockets, which would later, with a small modification, become Saturn V, the famous rockets that took people to Moon) [2].

Due to that explosion of scientific and technical development, the American public accepted the fact that the United States is the undisputed leader in the world, the first in everything in the field of technological development. The Soviets, on the other hand, who were also winners in WW2 and who had a good catch in scientific staff and technical material, worked quietly, without pomp, controlling the informations given to the public.

Because of that, the American public, even scientists, was surprised, even stunned, when the Soviets on October 4, 1957, sent the first artificial satellite *Sputnik I* [5]. His weight was 84 kg. A month later, the Soviets launched *Sputnik II*, which weighed 510 kg, and carried the dog Laika, the first living thing in Cosmos.

Frustrated, the Americans responded on January 31st 1958 with the launch of the *Explorer I* satellite, which weighed 14 kg, which showed inferiority to the Soviets.

Sputnik II, which carried a dog, showed that living beings could be sent into orbit and survive, but they could not be brought back to Earth.

That is why the Soviets on August 19th 1960 launched *Sputnik V*, weighing 4.6 tons, which carried 2 dogs and 6 mice and all were returned to Earth alive.

On April 12th 1961 the Soviets launched *Vostok I*, weighing 4.7 tons, in which cosmonaut Yuri Aleksejevic Gagarin was. It is the first human being to “leave Earth”. He made one circle around the Earth and returned successfully. The flight lasted 108 minutes [5].

To reinforce the impression, the Soviets on August 6th 1961 launched *Vostok 2* with astronaut Herman Titov [5]. He made 17 orbits around the Earth and successfully returned to Earth.

The American response was the launch of *Friendship 7* with astronaut John Glenn. He made 3 orbits and successfully returned to Earth.

On May 24th 1962 The Americans are repeating the endeavor: they launch *Aurora 7* with astronaut M. Scott Carpenter, who also made three orbits around the Earth.

The Soviets launched on June 14th 1963 *Vostok 5* (astronaut: Valerij Bikovski) who made 81 orbits around the Earth and stayed without gravity for 5 days [5].

As proof that they were following the Soviets, the American launched on August 21st 1965 *Gemini 5*, which makes 128 orbits and stays in Cosmos for 8 days.

The Soviet Spacecraft *Voshod 1* was the first Spacecraft to take more than one person from the Earth: there were 3 cosmonauts in it.

It didn't take long for the American response: on March 23rd 1965 the Americans launch *Gemini 3* caring 2 astronauts [5].

The race continues with undiminished intensity: on March 18th 1965 the Soviets launched *Voshod 2* with two cosmonauts. The ship orbited the Earth 17 times, and during the second orbit one cosmonaut (Aleksey Leonov) left the ship through a small opening and took 10 minutes of camera footage: it was the first spacewalk, the first time a human being was in Cosmos outside the spacecraft!!

On June 3rd 1965 the Americans launch *Gemini 4* with two astronauts. They made 3 orbits, and during the third orbit one of the astronauts (Edward White) left the ship in a spacesuit and stayed out for 20 minutes.

Other countries (France, Great Britain, China, Japan) started launching artificial Earth satellites, but their programs lagged far behind the program of the Soviets and the Americans. These countries developed their programs from the beginning, while the Soviets and the Americans “inherited” Hitler's programs, which were at an advanced stage.

On January 2nd 1959 the Soviets sent *Luna 1*, the probe that first reached II cosmic velocity and left Earth. The second cosmic velocity is the velocity required for the spacecraft to leave Earth and not become a satellite, and it is calculated by the formula

$$v_{II} = \sqrt{\frac{2\gamma M}{R}} = 11.15 \text{ km/s} = 4.014 \times 10^4 \text{ km/h}$$

$\gamma = 6.67 \cdot 10^{-11} \text{ N m}^2 \text{ kg}^{-2}$ - universal gravitational constant, M - the mass of the Earth, R - the radius of the orbit around which the spacecraft orbits before leaving it.

In March 1959, the Americans sent a probe that exceeded the II cosmic velocity and passed the Moon at 60,000 km.

On September 12th 1959 the Soviets launched *Luna 2*, a probe that “hit” the moon. It was the first man-made object to reach the moon.

On October 4th 1959 the Soviets launch *Luna 3*, a probe that orbits the Moon and sends photos of the side of the Moon that cannot be seen from Earth [5].

5 years after the Soviets (July 28th 1964), the Americans launched *Ranger 7*, which fell to the Moon (like Soviet *Luna 2*, 5 years earlier). *Ranger 7* took and sent

4308 photographs of the Moon to Earth. It was visible on them that the Moon was deserted, sprinkled with small craters.

On February 3rd 1966 the Soviets sent a probe, *Luna 9*, which landed “softly” on the Moon (all previous probes hit the Moon hard!). After the descent, the probe remained on the moon, and the instruments it carried were undamaged and sent valuable data to Earth.

The Americans caught up with them: they made such an endeavor on May 30th 1966 by sending the *Surveyor 1* probe, which landed softly, undamaged on the Moon and sent better-quality photographs to Earth.

Soon the Americans send *Surveyor 5*, which landed on the moon in *Mare Tranquillitatus*, had a robotic handle on it to take samples of the lunar soil. It sent more than 50,000 photos.

The Soviets launched *Luna 10* on 31st March 1966, which enters orbit around the Moon and sends photos.

The Americans followed them: on August 10th 1966 they launched *Lunar Orbiter 1*, a probe that orbits the Moon and sends photos of all parts of the Moon's surface. The result is: a map of the Moon.

From this historical overview, it is clear that the Soviets were constantly one step ahead of the Americans in the Space Program (the “conquest of the Cosmos”). It was a bitter bite for a nation that thinks it is the first in the World!

At that time, a miserable major political event took place that shook the World: the Cuban Missile Crisis. So on April 17th 1961 the Americans were humiliated because of the failed intention to invade Cuba. The political leadership of the United States needed a sensational event at all costs to restore American dignity. Thus, there was an increased interest in the Space Program and the achieving American prestige. In May 1961, then-US President John F. Kennedy announced his famous plan: that the United States would land a man (an American!) on the moon. (“ . . . *I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to the Earth*” [5]). By that the *Apollo* program begun.

The first spacecraft from the *Apollo* program (*Apollo 7*), with a crew of 3 astronauts, was launched on October 11th 1968, made 163 orbits around the Earth and during its orbit examined the possibility of restarting rocket engines in Space.

Followed by *Apollo 8* (December 21st 1968) with 3 astronauts. Their goal was to bring the ship into orbit around the moon and observe the surface of the moon with the naked eye while circling. They made 10 orbits around the moon.

On March 3rd 1969 *Apollo 9* was launched to test the functionality of the lunar module.

On May 18th 1969 *Apollo 10* was launched which arrived in lunar orbit, made 31 orbits around the moon, detached the lunar module and carried two astronauts to the surface of the moon, up to 15 km above the surface, then returned to the command module and landed on Earth. Thus, within the American *Apollo* program, everything is prepared for the final act: the descent of man to the surface of the Moon [5].

On July 16th *Apollo 11* was launched with three astronauts: Neil Armstrong, Michael Collins, Edwin E. “Buzz” Aldrin Jr. By July 20th 1969 the lunar module lands

on the Moon. For the first time in the history of the human race, man was on the surface of some other Cosmic Body! Neil Armstrong emerged from the lunar module *Eagle* and thus became the first man to set foot on the moon, noting: ***“That's one small step for man, one giant leap for mankind”*** [5]. Aldrin was with him. This whole endeavor was watched by hundreds of millions of people on Earth via live TV. They spent 21 hours and 36 minutes on the moon. They photographed, took samples of rocky soil, put the American flag, set up instruments that will send data from the Moon to the Earth after their departure. They returned to Earth safely on July 24th 1969 [6].

In the *Apollo program*, six more trips to the moon were made over the next three and a half years. *Apollo 15*, launched on July 26th 1971 took to the moon lunar rovers. Astronauts drove it on the moon at a speed of 28 km/h.

There have been 6 landings on the Moon: 12 people have walked on the Moon so far! Hundreds of kilograms of rock samples were collected from the surface of the Moon and brought to Earth, to laboratories, for testing. This was a great epopee of humans, a real revolution in science. Man has expanded its horizons beyond the Earth, descending to another celestial body [7]. During the Apollo flights, the Americans hoisted 6 flags on the moon (all American), emphasizing their superiority in conquering the Cosmos and superiority in the world in general.

Euphoria reigned, flight programs to the planets of the solar system were made, and even flight programs outside the solar system were considered, and dreams of traveling “to other stars” were dreamed of.

But how far can we really get into Space? Exact calculations sober us up relentlessly: The moon is so close to the Earth (relative to the cosmic distances) that, in fact, we have no reason to say that we were in the Cosmos [8,9,10,11,12]. What is more, we will show that, regardless of the development of science and technology, we will never be able to really go to Space.

2. RESEARCH QUESTIONS

The main question we asked in this paper is: does a man's flight to the moon mean a hint of the possibility of traveling to Space? Our goal is to quantitatively compare the length of a trip to the Moon with the lengths of other, hypothetical, journeys (for example: to the Earth's closest and farthest planet, to the Sun, to the center of our Galaxy, through the entire visible Cosmos). By comparing the calculated results, we report the appropriate conclusions that confirm our hypothesis about the impossibility of traveling through Space. The phrase “space travel”, which we often use as a synonym for flying to the moon, comes from a simplified definition of the boundary of the Cosmos: everything outside the Earth's atmosphere is the Cosmos. In reality, the entire solar system is just one point in the Cosmos, and moving through the solar system we still cannot say that we have “conquered the Cosmos” [13,14,15]

3. PURPOSE OF THE STUDY

The purpose of this paper is to break the false symbol of the possibility of space travel and to show that the words in God's instructions [3,4] that speak of the Earth as man's residence and the boundaries that will never cross are scientifically proven truth. Due to the limited lifespan of human life and the numerous values of the constants that

determine the function and destiny of our Cosmos, we can conclude that man will never travel through the Cosmos.

The special theory of relativity (Albert Einstein 1905) speaks in favor of this, which results in time dilation, length contraction and mass change:

$$m = \frac{m_0}{\sqrt{1 - \frac{v^2}{c^2}}}; \quad t = \frac{t_0}{\sqrt{1 - \frac{v^2}{c^2}}}; \quad l = l_0 \sqrt{1 - \frac{v^2}{c^2}}$$

Due to the size of outer Space, the speed of rockets that would actually travel into Space would have to be close to the speed of light. In that case, its length would be

$$l = l_0 \sqrt{1 - \frac{v^2}{c^2}} = l_0 \sqrt{1 - \frac{c^2}{c^2}} = l_0 \sqrt{1 - 1} = 0$$

At the same time, its mass would be

$$m = \frac{m_0}{\sqrt{1 - \frac{v^2}{c^2}}} = \frac{m_0}{\sqrt{1 - \frac{c^2}{c^2}}} = \frac{m_0}{\sqrt{1 - 1}} = \frac{m_0}{0} \rightarrow \infty$$

We got a contradictory result: the rocket would “shorten” to extinction, and at the same time its mass would be infinitely large. From this we conclude that a rocket can never move at the speed of light!

4. RESEARCH METHODS

To show how man's flight to the Moon, as an extraordinary endeavor of mankind (some say the greatest achievement of mankind) can not be a symbol of the conquest of Space, can not give hope of flying to other stars or galaxies, we will make strict calculations of flight time to some, for space travels, interesting celestial bodies.

For example: it is convenient to compare the parameters of the flight to the Moon with the corresponding parameters of movement on Earth (walking in the yard).

Then calculate the parameter of the flight to the Moon and compare them with the parameters of the flight to Earth of the nearest planet (Mars) and the farthest planet of the Solar System (dwarf planet 134340 Pluto).

After that, we calculate the flight even further from the earth: to the Sun, to the center of our galaxy.

Finally, we observe the entire known Cosmos and, by considering its parameters, draw final conclusions about the impossibility of space travel.

5. FINDINGS

5.1. Walking around the yard and circling the Earth

Imagine the following situation: we watch our neighbor walking in the yard and when asked what he is doing, he answers after a few laps: I walked around the globe on foot. His answer, not only is it incorrect, but it would provoke ridicule: he crossed 100 m and says that he traveled all over the globe!

Let's calculate the ratio of the distance traveled when walking in the yard and the distance that would be crossed when touring the Earth (circumference of the Earth) $O = 4 \cdot 10^7$ m :

$$\frac{l}{O} = \frac{10^2 \text{ m}}{4 \cdot 10^7 \text{ m}} = 2.5 \cdot 10^{-6}$$

This means that the distance traveled when walking in the yard is only 2.5 millionths of the way when traveling around the Earth. And because of that, we cannot accept the claim that our neighbor is a world traveler. Light orbits the Earth in 10 milliseconds, or orbits the Earth in 7.5 times in one second!

5.2. A walk around the Earth and a flight to the Moon

Let us now consider the ratio of the distances traveled in orbit around the Earth ($O = 4 \cdot 10^7 \text{ m}$) and the flight to the Moon ($d_{ZM} = 384 \cdot 10^6 \text{ m}$ - for simplicity, suppose that the flight takes place in a straight line connecting the Earth and the Moon, which will not change the conclusions).

$$\frac{O}{d_{ZM}} = \frac{4 \cdot 10^7 \text{ m}}{384 \cdot 10^6 \text{ m}} = 0.01 \cdot 10^1 = 0.1$$

The distance we travel while traveling around the Earth is one tenth of the distance we travel while flying to the Moon. Well, we haven't parted much from Earth! The light reaches the Moon in 1.28 s.

5.3. A flight to the Moon compared to a flight to Mars

After "conquering the Moon", scientists moved on further into Space. They wanted to conquer the nearest planet to us, Mars. Let's look at the ratio of the distance between the Moon and Mars from the Earth:

$$\frac{d_{ZM}}{d_{ZMr}} = \frac{384 \cdot 10^6 \text{ m}}{225 \cdot 10^9 \text{ m}} = 1.7 \cdot 10^{-3}$$

The distance of the Moon from the Earth is 2 thousandths of the distance of Mars from the Earth.

Let's look at the theoretical possibilities of spacetravel. The maximum speed of modern spacecraft (probes) is 58,000 km/h. It is possible that higher speeds will be achieved, so it is justified to round this speed to 100,000 km/h = 27,778 m/s. Let's calculate the time it takes for such a spacecraft to reach the nearest planet Mars, which is 225 million kilometers away from Earth.

$$t_{ZMr} = \frac{225 \cdot 10^9 \text{ m}}{27\,778 \text{ m/s}} = 8 \cdot 10^6 \text{ s} \approx 93 \text{ days}$$

5.4 A flight to the Moon compared to a flight to the end of our solar system

Let's calculate the ratio of the distance between the Moon and the distant parts of the Solar System (dwarf planet 134340 Pluto)

$$\frac{d_{ZM}}{d_p} = \frac{384 \cdot 10^6 \text{ m}}{6 \cdot 10^{12} \text{ m}} = 6.4 \cdot 10^{-5}$$

The distance of the Moon from the Earth is 6 hundred thousandths of the distance of Pluto from the Earth. The flight to Pluto would take time of

$$t_{Zp} = \frac{4.4 \cdot 10^{12} \text{ m}}{27\,778 \text{ m/s}} = 158 \cdot 10^6 \text{ s} \approx 5 \text{ years}$$

Light from the Sun reaches Pluto in 5.5 hours, and from Earth to Pluto in 4.4 hours.

5.5 A flight to the Moon compared to a flight to the Sun

The ratio of the distance traveled when flying to the Moon and flying to the Sun is

$$\frac{d_{ZM}}{d_S} = \frac{384 \cdot 10^6 \text{ m}}{1,5 \cdot 10^{11} \text{ m}} = 2,56 \cdot 10^{-3}$$

Which means that the trip to the Moon is 2.56 thousandths of the way to the Sun. Light from the Earth to the Sun arrives in 8 minutes.

5.6 A flight to the Moon compared to a flight to the Milky Way Galaxy center

Let's calculate the share of the distance traveled during the flight to the Moon and (imaginary) flight to the center of our galaxy, Milky Way:

$$\frac{d_{ZM}}{d_{MW}} = \frac{384 \cdot 10^6 \text{ m}}{28\,000 \text{ ly}} = \frac{384 \cdot 10^6 \text{ m}}{28\,000 \cdot 9,46 \cdot 10^{15} \text{ m}} = 1,45 \cdot 10^{6-3-15} = 1,45 \cdot 10^{-12}$$

The share of the Earth-Moon path is the millionth of a millionth of the way to the center of our galaxy. Light will travel to the center of our galaxy for 27,978 years, and to its edge for 81,000 years.

The flight to the Milky Way Galaxy center would take time of

$$t_{ZMWG} = \frac{28 \cdot 10^3 \cdot 9,46 \cdot 10^{15} \text{ m}}{27\,778 \text{ m/s}} \approx 15 \cdot 10^6 \text{ years}$$

5.7 Flight to the Moon compared to a flight to the limits of the known Cosmos

The estimated age of the Cosmos (according to the modern Λ CDM model- *A Cold Dark Matter*) is 13.799 ± 0.021 billion years [15]. If we consider the effect of the expansion of the Cosmos (which is an experimentally proven fact), then the diameter of the discovered, observed, known part of the Cosmos is 93 billion light-years (the so-called Hubble sphere). We do not know what is outside the known universe, we will never know [16].

It is estimated that the known part of the Cosmos is less than 1% of the total Cosmos! We can only see the little bubble of the universe. What is beyond that, we don't really know.

But that's where the mind stops, we've reached the limit that God has allowed us to reach, we can't cross that limit and we'll never know what's behind it.

Let's calculate the ratio of the flight time to the Moon and the flight through the discovered part of the Cosmos:

$$\frac{d_{ZM}}{d_K} = \frac{384 \cdot 10^6 \text{ m}}{93 \cdot 10^9 \text{ ly}} = \frac{384 \cdot 10^6 \text{ m}}{93 \cdot 10^9 \cdot 9,46 \cdot 10^{15} \text{ m}} = 0,4 \cdot 10^{6-9-15} = 4 \cdot 10^{-19}$$

The journey from Earth to the Moon is 0.4 billion dials of a billionth of the diameter of the discovered Cosmos.

If we compare and analyze the ratios of the paths obtained in points 6.1 and 6.7, we come to a very interesting conclusion: a neighbor who walks around his yard has a much greater right (closer to the truth) to say that he became a world traveler and traveled the globe (distance traveled in the backyard is 2.5 millionths of the way around the Earth), than astronauts who were on the Moon which can be said to have been in

Cosmos (the distance traveled when flying to the Moon is 0.4 billionths of a billionth of the diameter of the discovered Cosmos).

Spaceships should use a thermonuclear engine (which is, in part, developed). But interstellar travel, at speeds comparable to the speed of light, requires millions of tons of fuel, so it would be impossible to launch such a ship.

Even if they could accelerate a spaceship to near the speed of light, it would not be able to fly for long, because, at such speeds, even dust particles would lead to its destruction.

A special question is what would happen to man at those speeds and accelerations to achieve those speeds? With physiological processes? With bone structure?

From this we can conclude that spaceflights can only be performed at much lower speeds than the speed of light.

But then the flights would take a long time (thousands of times longer than human life), so they would be meaningless!

Light would travel 46.5 billion years to the edge of the discovered Cosmos.

CONCLUSION

In this paper, by comparing the distance of the Moon from the Earth and some other cosmic distances, we concluded that the Cosmos is invincible, that because of its dimensions and the length of our lives we will never be able to really go into Cosmos.

The fact that humans were on the Moon says nothing about space travel: The Moon is so close to Earth that by going to it we did not separate from the Earth.

The God who created the Cosmos, deliberately, according to the Plan, with certain laws governing the Cosmos, created man [17] and limited its living space to Earth.

The greatness and majesty of the Universe, even if only the part we can observe, really makes us feel small and the only correct conclusion is: The Universe is not a coincidence, it is the work of God Almighty.

Finally, we can conclude that man's flight to the Moon is not a symbol of the conquest of the Cosmos, it is just exploring the immediate surroundings of our Earth, while the Cosmos remains an eternal secret for us.

Johannes Kepler, studying the laws of planetary motion, concluded: "Now we see how God, just as an architect, created the world with such precision and thoroughness. God is great. His power is great. His wisdom is infinite. Almighty God, I want to reveal the majesty of your work to people, as far as my limited intelligence can understand "[18].

"The joy of studying nature is unsurpassed. Its secrets are infinitely deep, but we are allowed and given to penetrate deeper and deeper with our eyes. And the fact that nature finally remains incomprehensible, represents for us an eternal charm that encourages us to always approach it again permanently find new vistas and new discoveries" [19].

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