

SPACE FLIGHTS OR CAN HUMANS GO BEYOND EARTH?

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Humanity has been developing from its very beginning. We have been upgrading our tools, building cities, making our home a better place. But one day, we understand this planet is not the limit. There's much more outside of it. So we try to discover what is out there. We build spacecrafts and satellites to go higher and see more. We have built a space station and put it into our orbit. But can we go further?

We think most of you know who Elon Musk is. He is a founder of Tesla, SpaceX and some other companies [1]. Elon is a modern businessman. He has made most attractive electric cars and his speeches about his rockets which can take you anywhere on Earth in less than an hour sound amazing. He also claims to deliver humans on Mars until 2024 [2]. But the question is: Is that real?

Donald Trump's newly appointed science and technology advisor, Yale University professor David Gelernter [3] says: The Apollo moon landings are the biggest fraud in mankind's history.

In the modern age, we have never been outside the Earth's magnetic field. With the exception of the alleged 24 human beings who were in lunar flights. It was the Apollo program during the four-year period spanning from 1968 till 1972, all human spaceflights took place in low Earth orbit (LEO) or below. Even the International Space Station conducts all its operations in LEO.

Why is that? As he explains: this is because orbits higher than low orbit can lead to early failure of electronic components due to intense radiation and charge accumulation.

If NASA scientists honestly admitted in 2012 that they still hadn't worked out how to properly shield the spacecraft from the radiation emitted from the Van Allen belts, how the hell did we send human beings into space covered in aluminum foil suits? At a particular time when the Solar activity was at its peak? The answer is simple: It just never happened, says David.

Many people heard that Moon mission is a myth. But how can we prove that? Let's try to understand why we can't go higher than LEO (160 - 2,000 km) [4].

The Van Allen radiation belts are two 'donuts' surrounding our planet. They are held around Earth by its magnetic field [5, 6]. The inner belt stretches from 1,000 km to 6,000 km. The outer one is from 13,000 to 60,000 km. These belts can shrink and the lower one can decline to just 200 km above the Earth's surface. Due to space weather, electrons, moving very fast go into this belt, but it's hard for them to exit because of the Earth's magnetosphere and they circulate around our planet. The inner

belt contains electrons with energy of hundreds of keV and protons with up to 100 MeV. The outer belts consist of electrons with energy from 0.1 to 10 MeV.

So these are two very radioactive belts where solar cells, integrated circuits and sensors can be damaged. The Apollo missions were the first time humans travelled through the Van Allen belts. The radiation impact on the astronauts was low because of small amount of time spent inside of the belts. As wiki says most of the Apollo astronauts lived long enough (some are still alive) [7].

We can make a conclusion that going through the Van Allen belts is not dangerous. But while gathering most of the space weather inside of them, these belts don't allow space radiation to come close enough to Earth. What happens when we go outside of them? What if we stay in deep space for a long time? What about Elon Musk Mars journey considered to last for several months? I think this question requires a much more thorough further research.

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