

# Why do we want human space flight and why go back to the Moon?

*No matter if we ask “why”, people will go to the Moon, Mars and other space destinations anyway in the long term. But if you bring this topic into the classroom, you will probably get the question “why”. You can start long discussions or just try to use the quick answers below.*

## REASON 1

### The desire of people to discover

For many people, this is the best reason. People always want to go further than before, pass new frontiers, and find new opportunities for future generations. It's a natural desire that cannot be stopped. It is fed by curiosity, a very well developed natural property that defines human beings. It plays a huge role in human history. One can be critical about this property or be proud of it. But in any case, many among us like to be in the first row when new discoveries are made!

If you have doubts: just ask yourself honestly why you sometimes travel to other countries during holidays.

## REASON 2

### Scientific research on the Earth, Moon and space

There are many science topics that are treated by Moon missions. Here is only one of them: On Earth we cannot easily find traces of the oldest history of the planet, because the surface is constantly moving and changing. But on the Moon we can find them easily, and we can study the period just after formation of Earth and Moon much better. That will help us to understand the origin and evolution of our planet and the life on it.

## REASON 3

### Watching the universe in detail

On Earth people daily use a big range of techniques with radiation (visible light, ‘invisible light’, radio waves, microwaves ...). If we want to look at deep space, this radiation noise from Earth is a problem. Therefore it would be very rewarding to put an observatory on the backside of the Moon, where there is no ‘Earth noise’. We will be able to look at the universe in more detail and further back in time, and then find new information about our origin.

## REASON 4

### Worldwide collaboration

Technically, a journey to the Moon and living in a moonbase is already possible. But it is still a huge challenge. Even bigger nations today are not able to do it on their own. They are obliged to work together with countries around the world. Despite the many international conflicts on Earth, working together is mandatory for powerful nations if they want to start living on the Moon. Therefore, human space flight helps building stable international relations and so helps avoiding war.

## REASON 5

### Humans learn to survive in space

We still have to learn a lot about surviving longer periods in space. A moonbase will allow us to learn surviving in space step by step and with backup from Earth, before going in deeper space, where direct help from Earth is not possible.

## REASON 6

### Mining space

Some resources on Earth have become rare, but we will still need them in the future. One example are the so called 'rare earth metals' that we need to produce electronics. Even water could be mined from space one day, or Helium-3. Helium-3 is a very rare isotope of the element Helium on Earth, but on the Moon it is more abundant. In theory, helium-3 can be the fuel for future nuclear power plants (nuclear fusion) that would produce electrical energy in a much more clean and safe way than the current reactors. Anyway, people will need extra resources in the future, and we will start getting them from space once it is less expensive to do so.

## REASON 7

### Survival of humanity

Humanity is in danger. It has a lot to do with the fact that the human population keeps growing, while our planet has its limits. Additionally on the long term, there is a danger that a large meteorite could crash into the Earth one day, destroying our entire population. The chances for humanity for not going extinct are better if we would live on more than one planet. It might seem something for a very faraway future to build cities on other planets/moons or even change an entire planet to make it habitable (terraforming Mars). But even then, we still have to start these plans one day, isn't it? Why should we wait?

## REASON 8

### A space port for departure on long flights

Once we are ready to travel to Mars, it would be much easier if we would depart from the Moon. Unlike on Earth, on the Moon we don't have to pass a thick air layer and there is much less gravity. Heavy Mars equipment can more easily be launched over there. When a

moonbase is ready, operational and inhabited, then it will be easier to collect all the necessary equipment, and we can fill the Mars rockets with fuel directly taken from the Moon (by splitting water). The astronauts will go to the Moon with a small vehicle, and then travel on to Mars with all the bigger things they need.

## REASON 9

### The 'overview effect'

The word overview effect has been invented by Apollo astronaut Frank White. He referred to the effect that overwhelm astronauts when they look through the window of their space craft and see the Earth for the first time. They experience a 'cognitive change', they get a new level of consciousness.

From space, we see our home as a planet without any boundaries, as a small and vulnerable place, a lonely grain of dust surrounded by an enormous and strikingly empty black space. It is enveloped by an incredibly thin layer of air that keeps us alive. The Astronaut suddenly realizes how vulnerable and how precious this little sphere is for us. It looks like a lonely space ship where all humans together are in charge for survival.

Some astronauts think that world politics could change strongly in a positive way if all world leaders would just make one trip to space and look through their window. And the three first astronauts that travelled around the Moon (Apollo 8, December 1968) agreed about one thing: we went there to watch the Moon, but the most important thing we saw was our home planet Earth. When astronauts come back on Earth, they often have a strong desire to take more care for our planet and take action. They see humanity as one team with common interests, regardless of their nationalities or cultural differences.