

CHALLENGES HUMANS HAVE FACED IN SPACE EXPLORATION

Cost of space exploration is so huge that it must be mentioned first in this list. Today it costs about \$10,000 to get a single pound of mass into low earth orbit. A significant part of this cost is related to the design and production of the launch system. Nearly 40% of the total mission cost is related to ground and launch processing. The full life cycle cost must be lowered by an order of magnitude to enable frequent human and robotic operations in space [1].

The space environment is unsuitable and difficult for habitation. Space is filled with dangerous cosmic rays and irregular solar storms that could cause intense radiation. Scientists predict that astronauts traveling to Mars will be exposed to radiation levels up to 20 percent more than they will ever receive during their lifetimes on Earth. This intense radiation could cause heart, lung, and eye problems as well as neurological disorders and even cancer [310].

The third is, quite simply, the distance. It is perhaps the most apparent hazard for humans because we do not live as long as space travel. Astronauts can give birth to children on a spacecraft, but it even sounds scary. For instance, Mars is on average 140 million miles from Earth. It takes about 250 days to reach there.

Create self-sustaining and reliable human environments and habitats that enable the permanent colonization of space and other planetary surfaces. Currently, the infrastructure and integrated technologies needed to support permanent, self-sufficient human settlements away from Earth do not exist. Effective closed loop systems do not exist to replenish consumable resources. This makes long-term stays cost-prohibitive and poses significant risk to personnel if resupply missions do not arrive on time [1].

People like dreaming of settling the planet Mars, but it is rather difficult to do so. Global dust storms occur every 5.5 Earth years (three Martian years) and could

last for months. Besides covering the solar panels, they could also block sunlight from reaching Mars, which could put the stations and astronauts at risk. Fortunately, dust storms on Mars are unlikely to cause serious physical damage to the stations. Despite their name, they are more like a breeze than a storm. A study by postgraduate students at the Massachusetts Institute of Technology (MIT) has shown that a human colony on Mars could die of starvation. The group based their research on a crewed mission planned by Mars One [2].

So, we have to solve many difficulties if we want to be in space. We must keep doing it, and we have to spend so many resources on it as we can. Our space power will help us to become the greatest civilization in history.

REFERENCES

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