Space exploration

Student’s name

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Course

Date

Space exploration entails the exploration and discovery of celestial structures through the use of space technology in outer space. Space exploration is defined as the use of space technology and astronomy to explore outer space (Svetlichnyj & Levchenko, 2019). Space science is a result of space exploration. The process and study involved in space exploration are performed by astronomers using telescopes or through physical exploration done by human spaceflight and robots. Some of the big companies doing great things in space exploration are SpaceX, JAXA, and Roscosmos among others. There have been lots of developments and technological advancements in space exploration over the years. The effort and time some people have dedicated to space exploration may trigger a question of why it is important or whether it is a waste of time. Different people have different takes on the essence of space exploration which forms the ground for discussion in this paper.

Space exploration could be a waste of time as some people think due to some factors. The first reason why space exploration is a waste of time is few direct benefits are realized from space exploration. The investment in space exploration is big and no direct problem has been solved through the deliverables realized from the processes involved in space science. The knowledge gains obtained from the exploration cannot compensate for the investments. Failure to realize immediate returns from such investment makes the entire work of space exploration a waste of time (Afshinnekoo et al, 2020). On this point, it can be urged that the investment in space exploration cannot be used to address the problem on Earth, especially in belt-tightening moments like now, post Covid pandemic times. This point can also be viewed from an aspect of opportunity cost and priority. Space exploration is not a priority on Earth when there are other big global challenges such as climate change, diseases and hunger in third world countries, and global warming among others that call for attention and resources.

The second reason why space exploration is a waste of time is the danger involved in space travel. Over time, many people have lost lives in space exploration hence leading to distress among people affected by such losses directly and indirectly. For astronauts, their safety is in jeopardize because of the strong radiation that they are exposed to at work. It is believed that the radiations in space are 10 times compared to the radiation on Earth. Such strong radiations can damage the immune systems, cells, and DNA and hence leading to vulnerability to diseases such as cancer and cataracts. (Crucian et al,2018) Moreover, while in space there is the danger of contact with alien life which could jeopardize human life. Exposure to such advanced extraterrestrial civilization may lead to invasion or attacks on Earth or humankind.

The third reason why space exploration is considered a waste of time is failure. There have been very many instances of failure in matters of space exploration over time. Such failures include satellite crashes, loss of robots, and rockets blow among others. Such failures are not worth the time and money spent in the crafting and making of such spacecraft and equipment to try something that has minimal returns on human living on Earth.

The fourth reason why space exploration is a waste of time is the creation of international tension among competing nations. There has been a space race among the superpowers to address the challenges in space exploration. As time goes, there could be a rise in tension due to sovereignty over satellites, space resources, and other planets. The domination of technology used in outer space could have a power balance on both bipolar and multipolar Earth. The possibility of creating conflicts between countries makes the entire space exploration a waste of time due to the aftermath of such an occurrence.

Space exploration is not a waste of time despite the many supporting reasons why it is a waste of time. Space exploration and space science has enabled the discovery of useful technologies. Moreover, some people argue that space exploration could be the way of escaping the extinction of humans if the conditions on Earth became unsustainable. The big question is discussing the justification of the time spent on space exploration based on the benefits realized from the overall activities.

Knowledge generation is the first reason why space exploration is not a waste of time. Space exploration has enabled the discovery of things that have led to a better understanding of the universe. Such knowledge includes knowledge about the planets, stars, and comets among others. The knowledge obtained through space exploration contributes to the development to enhance environmental sustainability (Ferretti at al,2020). Moreover, the current research and knowledge inspire the next generation through the provision of opportunities to watch, learn and participate in space science. Despite the lack of immediate benefit from space exploration, the time spent on space exploration is not a waste because enough base for further research and exploration has been created.

Exploration and discovery in the second benefit of why space exploration is not a waste of time. Human beings are known to explore to satisfy curiosity and find new opportunities. For instance, in the 15th and 16th centuries, Spain and Portugal invested heavily in expeditions which gained their riches and made them superpowers. Other discoveries of the 18th and 19th centuries by Captain Cook backed scientific research (Jowitt, et al). Likewise, space exploration has the potential of creating modern superpowers and contributing to modern scientific research and technological advancement. This is evident in the current investment in space exploration which is widely done by the big economies in the world.

Space exploration has created a tool for scientific advancement and a platform for crucial tools such as artificial satellites. The advancement in technology and science as a result of space exploration is evident that it is not a waste of time. Space exploration has enabled technologies in satellite development, telecommunication, weather forecasting, and global positioning (Prasad et al,2020). The satellites and robots developed as a result of space exploration have enhanced telecommunication through the development of technologies such as Starlink. Moreover, space satellites have enabled easier monitoring of global challenges such as global warming and wildfire detection. Lastly, the technologies discovered and applied in space technology have applications elsewhere hence facilitating in solving of other problems affecting planet Earth. For instance, NASA research contributes to the creation and development of fire-resistant material, medical devices for pain relievers, land mine systems, and artificial limbs among others.

Space exploration could save humanity through the discovery of other planets that can support humankind. Although this point has lots of debate on religious grounds, there could be a possibility. Lastly, the job created in space exploration contributes to time justification in space exploration. Countries have thousands and thousands of people working in space exploration which contributes to their livelihood.

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