**SPACE EXPLORATION IS NOT A WATE OF TIME**

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Over time, space exploration has presented numerous benefits to humans as well as to our planet earth. It is therefore, a justifiable argument that space exploration is indeed not a waste of time. Among the benefits of space exploration include but not limited to; improving health care, protecting our planet and environment, creating scientific and technical jobs, improving our day to day lives, enhancing safety on earth, making scientific discoveries, sparking youth’s interest in science as well as increasing cooperation of countries around the world (https://www.asc-csa.gc.ca/eng/about/everyday-benefits-of-space-exploration/)

While on space travels, astronauts experience health related issues due to microgravity, radiation and isolation. These health conditions are comparable to those exhibited in aging or sedentary lifestyles. Research done on astronauts experiencing such health conditions have provided beneficial insight in management of conditions such as cardiovascular disorders, Type 2 Diabetes, osteoporosis and balance disorders. Additionally, through space exploration, there have been inventions in surgery such as invention of the neuroArm, a surgical robot that performs brain surgeries that would have been otherwise impossible. The neuroArm is not only safe but also efficient. (https://www.asc-csa.gc.ca/eng/iss/science/why-do-we-conduct-science-experiments-in-space.asp)

Environmental conservation and protection of our planet has been made easier through space exploration. Satellites in space are able to easily notice changes on the earth such as shrinking of the Aral Sea and decline in the Arctic sea ice extent. Such information is crucial in adaptation, management and mitigation of climatic change. Through the satellites, specialists are able to monitor environmental pollution. For example, the thinning of the Ozone layer was discovered through satellites and this led to signing of the Montreal Protocol by governments around the world to help protect the ozone layer and therefore prevent adverse climatic changes. In addition, the satellites are able to locate oil spills and adverse effects of mining and provide essential data towards containing and mitigation of degradation of our natural resources. Moreover, the satellites are used to track different species of wild animals, monitor their natural habitats and thus inform decisions regarding protection and conservation of land and natural resources thus protecting ecosystems and life on earth.

Space exploration is a field which has led to emergence of high tech jobs in areas such as engineering, science and technology. It has opened up business opportunities to Small, Medium and Micro Enterprises in sectors such research and development in space related projects. The industries are able to commercialize their products and expand their business internationally. This has in return led to revenue generation and growth of economies in countries that have embraced space exploration.

Our day to day lives have greatly improved courtesy of space exploration. Through satellite inspired technology, products that are essential in our daily lives have been developed. Such products include our small cell phone camera which was discovered in an effort to miniaturize cameras for spacecraft. Other examples include air purifies used in space which were found to be equally useful here on earth, enriched baby formula whereby most baby formulas contain omega 3 which was initially an inclusion in life support systems for long missions, memory foam which was invented to keep test pilots cushioned during flights and GPS technology which is used even in our cellphones to find different locations. With satellites, weather forecasting is now more accurate. In addition, people all over the world can now easily connect through satellite television, phones, radio and internet access. Large scale agriculture has been made possible through use of satellites to estimate soil humidity, precipitation and crop conditions. There is also ongoing research on how to grow food in space and when successful, this will positively impact food security.

Enhancement of safety on earth has been improved through use of satellites. Impending natural disasters such as hurricanes, floods, earthquakes, wildfires, tsunamis and volcano eruptions can now be easily predicted. Provision of timely and reliable information on such impending dangers has helped to adequately prepare for such disruptions which are life threatening. The affected nations are able to deploy sufficient rescue teams in good time and thus save lives. Through use of satellites, people in distress during such natural calamities can be found and rescued by the search and rescue teams. Moreover, very small ground movements can now be measured through the help of satellites and this has made our infrastructures such as roads, airports and bridges much safer. Buildings and bridges are now earthquake resistant and with shock absorbers, a technology initially used in spacecraft and launch pad equipment to prevent stress and extreme tremors while in space.

Space explorations have led to an increase in scientific discoveries which are way beyond human imagination. This has led to a significant advancement of scientific knowledge. Through data collection by space probes, telescopes and rovers, scientists have discovered that there are more planets, stars and galaxies than initially thought. In addition, space explorations have helped to prove Einstein’s hypothesis on existence of gravitational waves. Ice on mars and moon as well as presence of liquid water on moon has been discovered through space exploration. It is true then, that space exploration is pushing humans beyond their limits and boundaries to make more discoveries than there ever were.

Another importance of space exploration is its inspiration on youths who have a particular interest in science. The field of space exploration acts as a fuel for their curiosity, dreams and aspirations. Astronauts play a big role as role models to the youth who are interested in areas such as engineering and science. They visit schools in person, virtually and sometimes live from space and inspire the young dreamers. Additionally, space exploration provides the young students with real space missions through internships and student jobs thus providing them with real life experience which inspires their research, awareness and learning in their area of passion.

New means to address global challenges have now been discovered through space exploration as it demands cooperation among different nations for the better good of all humankind. This has therefore led to emergence of cooperation and partnerships such as International Space Station. When nations come together to address mutual concerns such as global warming and adverse climatic changes, they seek solutions in space explorations and agree on measures that address such global concerns. By doing so in unity, the world becomes a better place for all its inhabitants. When nations work together, they pull their resources and benefit from their diversity. Eventually, this coordinated unity of purpose goes beyond space exploration into how the developed and the developing countries interact to solve issues affecting humanity such as hunger, starvation and terrorism. This also helps address humanity evils such as ethnicity and racial discrimination thus making the world a better place for everyone ( https://dylantaylor.org/10-ways-space-exploration-benefits-earth-part-i/)

In conclusion, space exploration is worth all the time and energy as it presents to mankind and all inhabitants of the earth uncountable benefits. It is true that humanity has more pressing concerns such as hunger and terrorism but space exploration is important too.

  **References**

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**https://www.asc-csa.gc.ca/eng/about/everyday-benefits-of-space-exploration/**