

The Limit Does Not Exist: Why We Explore

Man has always been naturally curious, eager to exercise his imagination and imagine the possibilities. And despite his knowledge of how minuscule he is in the entire universe, he still strives to overcome his limitations.

One of the best illustrations of man's innate character to strive for more is space exploration. We have the entire planet Earth to provide us with shelter, natural resources, and other elements vital to survival. But that does not stop us from wondering whether what we have now is all there is; and that certainly does not stop us from doing something to discover more about the 'what-could-bes.'

Through space exploration, we are able to know more about our universe, and our place in it. Its length and breadth are too great for our comprehension, but we are still able to understand bits and pieces with better precision. Slowly, we are able to bridge the gap of what we can reach and cannot—and possibly, who we can reach.

Advancements in space exploration show no signs of stopping as astronomers continue to discover more planets and learn more about those we are more familiar with. A couple of years ago, only the planets in the Solar System are the ones which are commonly featured in media. But now, reports of new planets from different planetary systems are becoming more frequent. We are also making progress with regards to our knowledge of Mars, as the Curiosity rover continues its exploration of the Red Planet.

The discovery of new planets can also lead to a greater breakthrough: finding a habitable planet similar to Earth. We might not be there yet, but the evidence seems to support the idea. It might just be a matter of time before humans start to leave Earth for another planet, and find answers to problems such as overpopulation and improper use of natural resources.

As scientists and astronomers discover more sophisticated technologies and other advancements, the progress on exploring space will continue to accelerate. We might never be able to conquer the entire universe, but maybe that's not really the point. It also shows the limitlessness of our human spirit. We explore because we want to know what lies ahead of us—and what our place in the cosmos is.

Deep Impact

The NASA might be focused on space but that does not mean that their efforts only have implications beyond our planet. In fact, its impact is closer to home than what you might think.

Space technologies have made their way through our everyday lives via spinoffs, a term used “to describe specific technologies developed by NASA for its missions that are transferred for commercial use or some other beneficial application.” Presently, there are over 1,500 such cases, in such broad areas as health and medicine, transportation, public safety, consumer goods, environmental and agricultural resources, computer technology, and industrial productivity. Some of these spinoffs include the artificial heart pump, liquid-cooled garments, and low-cost ballistic parachute system.

In addition, NASA also spends money here on Earth to pay for the salaries of the workers and scientists, and the major private companies that work with them, which includes corporations like Boeing.

A study done by NASA and Georgetown, entitled “A Sustainable Method for Quantifying Benefits of NASA Technology Transfer” further illustrates the former’s contributions to the American economy. The study quantified the benefits into the following categories: job created, revenue created, productivity and efficiency improvements, lives saved or not lost, and lives improved.

Results showed that the 187 projects assessed generated the following: 1,665 jobs; \$532 million in revenue; 76 percent have some sort of productivity or efficiency that would yield cost avoidance benefits, which totaled \$4.13 billion for four companies; roughly 16 percent were expected to show that they resulted in lives saved or not lost, two companies of which were able to save 659 lives; 32 percent were expected to be able to provide data on the numbers improved due to technology transfer from NASA, with four companies having improved over 30 million lives; 15 percent would be expected to have demonstrable positive environmental impacts.

In addition, the study said that other potential benefit categories may eventually emerge, such as process or manufacture time improvements, and increases in product lifespan and/or durability, among others.

As these figures and cases have shown, NASA’s efforts do have positive effects—some quantifiable, some not so much. It’s just a matter of letting these facts be

known, or looking closely.

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http://www.nasa.gov/50th/50th_magazine/benefits.html

<http://spinoff.nasa.gov/pdf/AIAA%202011%20Quantifying%20Spinoff%20Benefits.pdf>

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