Reading

Chris Hadfield: Why We Need a Space Program

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"If anybody asks, or if you're just thinking about it in your own mind. It's a question you ought to ask all the time. 'Why do we spend money on space exploration.' It's a valid question. You ought to ask it. We're not spending our own money, we're spending the money of the whole country. We're spending someone else's money. So why is it worthwhile? I've asked myself that right from the beginning. I don't want to waste other people's money just so I can go for a ride. As much fun as it is, that's not the point.

So, number one. The direct benefit. What did we learn from doing it? There's understanding the Earth itself. All the ways we observe our planet, though the observatories that we've built, through the long-term looking of the changes of the atmosphere--the changes in the surface, measuring the temperature. All of the satellites that we've launched, whether unmanned, launched from the Shuttle, or things that are on the outside of space station. We have 200 experiments running inside--that teach us about things like fundamental fluid physics and how flame propagates.

We invented a box about this big that is a flow cytometer that you can do blood analysis in a machine in ten minutes. It's called Microflow. We recognize the need on the space station for it, and brought the right people together to build it. Because when you have the common enemy of complexity and cost, you bring together people who would never talk to each other otherwise. So that box is being tested in Canada, with experiments being done in Ghana right now. There's a whole suite of direct applications that come back. That's one.

Two, is that it's absolutely fundamental to our nature. Right from the earliest of history. The only reason that there are people in North America is that each successive generation has taken the best of their technology and carried it as far as they could go. And 30,000 years ago, people starting coming to this continent, and pushing us [forward]. Every dissatisfied teenager is an emissary for taking the best of technology and seeing what's over the next hill. And as we invented the next level--canoes, sailboats, and watches so we could figure out longitude. As we invented steamboats and locomotives and airplanes and spaceships, we have always taken the very best of our technology to take us as far as we could go, so that we could better understand the universe around us.

"You have to provide your children with a challenge that is right on the edge of impossible."

And that's cultural. That's how we understand everything that goes on. That's fundamental. That's not going to be denied just because it's expensive. It's going to happen. It's a repeated historic artifact of who we are. So space travel is the direct result of that need.

But the third reason is inspirational. You have to provide your children with a challenge that is right on the edge of impossible in order for a nation and a culture to grow. And it hugely inspired me, back in 1969, when I saw the guys walk on the moon. If you look at PhDs per capita, this country has never inspired more people to pursue higher education than we did as direct result of the Apollo program. Because we challenged people to do something really new.

Last week, I was in New York, and I visited Tumblr. And Tumblr is an amazing social media capability. And it's a 27-year-old who thought of it and runs the whole thing. It's recently capitalized, and created a tremendous amount of wealth. It's brought in all of these brains, that are working together in a really interesting and creative environment. None of those people are astronauts. None of them are in the space program, but they are fascinated and inspired by the space program. And a large reason for doing what they want to do is because of the inspiration that comes from a nation that has space exploration as part of what it does.

To me, those are the three great pillars of why we explore space and why we're always going to."