

MTV Geek

Interview With The Astronaut: Talking To Dr. Leroy Chiao

Posted 7/5/11 2:30 pm ET by Charles Webb in Interviews, Tech

The good Dr. tells us why space flight is important and what it means to be a country without a space shuttle.

Dr. Leroy Chiao is part of the small community of men and women who've had the opportunity to leave the confines of our planet to travel into orbit.For 15 years, he was a member of NASA and a commander aboard the International Space Station, where he got to join men and women from around the world in exploring the science of space travel. With the pending retirement of the space shuttle program, Dr. Chiao spoke to MTV about the importance of the program and why the U.S. needs to keep reaching for the stars.

MTV Geek: Why is the space program important? Why should the average American care that NASA is getting defunded?

Leroy Chiao: One can always talk about the technical spin-offs—the space program has always been a driver for technology and things like that. But I think the bigger picture answer is that it has to do with national prestige and it has to do with inspiring the next generation of people in the United States. You know, when I was a kid, I was an eight-year-old kid watching the Apollo moon landing and that inspired me to want to do well, to want to study science [and] mathematics, to study engineering, and then eventually, I became an astronaut myself.

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I think a nation that turns its back on advancement and starts looking inward is on the decline. And there are many examples from history. One would be England: you know, England used to be a seafaring power—I mean they still are—but they used to basically have colonies all over the world. "The sun never set on the British Empire." And then when they started contracting, it led to their demise. And I think that no one would argue with the statement that England is pretty much a shell of its former self.

I don't want to see that happen with the United States. If we start turning our backs on the space program and deciding that it's not worth it, and that we need to dedicate that money to problems here in the country, then I think we're taking that first step towards decline. The reason being that the NASA budget has been basically one half of one percent of the total U.S. budget. So if you take that one half of one percent and say that "We're going to do away with the space program!" that one half of one percent is not going to solve the social problems of this country. It's not going to solve the healthcare problem, it's not going to solve any of those problems.

What we're going to do is create new problems because you put all of these other people out of work. And as I said, the intangible is that you're no longer inspiring young people with the fact that we're exploring space, and basically, we're saying that this stuff is not important-that's it's not important to keep going outwards, and to keep spreading out.

I'm sorry, that's kind of a long-winded answer [laughs]!

Geek: No, that's a great answer. But it also kind of leads into another question: hard science isn't-for lack of a better word-sexy to the lay person. What can get people excited and enthusiastic about space exploration besides, you know, hoping that we'll meet an alien one day?

LC: Well, in a way, we've been a victim of our own success. People have gotten used to the idea of space shuttles launching and of course we've had the two accidents. And unfortunately, for the time during the accidents, that's when the media and the public are really interested.

But the fact is that over the last 30 years, we have been regularly launching space shuttles, we've built the space station, which is by far, the most ambitious space construction project that's ever been undertaken-by the way, done with an international coalition, including former Cold War enemies like Russia.

And we've made it look easy, so people are kind of ho-hum about [it]. And a lot of usmyself included—are scratching our heads [and saying] "Well gosh, how do we get people excited about space again?" And one idea is that the public has gotten used to us going into low-Earth orbit: sending shuttles into orbit for two weeks, building a space station in low-Earth orbit. Maybe they get excited when we want to go somewhere else, like go somewhere farther.

So that's why five, six years ago you saw this push to go back to the moon. The Constellation program developed into a moon program. In the words of then-administrator Michael Griffin, it was "the Apollo [program] on steroids." Well, the public reaction to that was pretty ho-hum, saying "Well gosh, why are we here, 40-some odd years later, doing what we already did all those years ago? And why's it costing this much money?" People weren't interested.

So that was not the answer. And I think the answer is what's part of the new space policy which was rolled out last year is this "flexible path" option of exploration beyond low-Earth orbit. And what that does is say, okay, we want to build our infrastructure and develop technologies to explore sustainably long below low-Earth orbit. What that means is, let's not just plan say, for a mission to Mars, and spend all this money, build a space craft, train a crew, send them to Mars, get the picture on the surface of Mars with the boot prints, come back and never go back again.

Let's push out gradually and find some intermediate steps that would be interesting and scientifically helpful and advance our technologies. For example, a near-Earth object: can we go and send a space craft with astronauts onboard to a near-Earth object like an asteroid? [Can we] spend six months in space, away from the Earth, which is something

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we need to learn how to do, we need to learn how to keep astronauts healthy for that long of a time, because that's how long it takes to get to Mars, or that order of magnitude, and return them again? That would be interesting.

We could go back to the moon—not as a goal to establish a permanent moon base—but to go back to the moon, but because we need to re-learn how to land on another planet. We haven't done that since 1972—with astronauts onboard, anyway. And so we need to relearn how to do that. And we can set up a manned, tended base there, to test our new hardware, our new rovers, new spacesuits, new operations, things like that.

And by the way, let's do this in an international way. The International Space Station was a real testament to this international framework that was developed. And two years ago, I was on a White House-appointed panel called the Review of U.S. Human Spaceflight Plans Committee, and was chaired by veteran aerospace leader, Norm Augustine, so we became known as the Augustine Committee. And one of our findings about the ISS was that this international framework, which has worked surprisingly well, was one of the best things that came out of the program. So let's use that same framework—in fact, let's expand it to include emerging space powers like China, and let's go and explore internationally. Let's do this program, let's develop spacecraft, develop operational concepts and go to the moon, go to near-Earth objects, maybe go to a Lagrange Point, where you might want to locate a fuel depot—you know, develop the technology and operations to refuel a spacecraft in space—and sustainably go outward from there with the eventual goal of getting humans onto the surface of Mars.



Geek: Well, a lot of this seems to be put on the private sector at this point. Our government and governments abroad are putting the onus on the private sector for so-called "non-essential spending." Do you think private business will be able to step into the breach and keep spaceflight viable?

LC: The private sector is a different area, a different market, if you will. Part of what we did in this Augustine Committee, several of our options—the White House basically asked us to develop several different option paths for the [then] new administration to kind of choose from in developing a new space policy. Several of the sub-options that we put forward included stimulating commercial ventures to take over the "taxi service" if you will to take astronauts from the surface of the Earth up into low-Earth orbit to the International Space Station. The argument being that we've been sending astronauts to space for over 50 years now, so the technology's mature, we know how to do it technically, and it's just a question of whether we can make a commercial case where commercial companies can go and make a business of it.

There's some commercial companies trying to build space stations; seven people have already signed up to be "space tourists," if you will, where they've gone and flown up in the Russian program and spent ten or so days in space. In fact, one gentleman went twice.



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So, the answer is yes, it can be done safely. The question is can it be done profitably such that commercial companies will want to do this. Our point on the committee was, "Look, let's give these guys a chance to succeed." They may not succeed, but we should *try*. And so, it's an open question at this point.

Geek: When do you think we might have our first commercial space flight open to the wider population?

LC: Certainly, people are making projections, and the numbers being thrown around are 2015, 2016. You know, it's possible [sighs]. I'd hate to make a prediction like that. I would say, just from my gut, we're probably five years away, maybe a little longer. So if I had to venture a guess, I'd say maybe 2016—not earlier.



Geek: A lot of our fans are obviously not only fans of sci-fi, but hard science as well. What can they do to keep the space program and the dream of space flight alive?

LC: Well, certainly, you can always let your elected representatives know how much you support the space program, and how important you think it is. And like I said, I think the most important parts of the space program are the intangible parts—the parts that inspire the next generation, the parts that make us feel good as a nation.

It sounds corny, but a country or a group—you can only do as good as you feel about yourself. And boy, I've very concerned that we're coming up on the last space shuttle flight and that we're going to lose all that know-how that we have of operating a space plane. We're the only country, the only *entity* in the world that's built and operated a space plane and that's about to go away. And we're no longer going to be able to launch our own astronauts into space for, like I said, at least five years.

You can find out more about Dr. Chiao on his site.

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