

## *'Americans Will Not Like It'*

Michael Griffin on the Global Space Economy

**T**he *National Aeronautics and Space Administration (NASA)* turns fifty years old in 2008. Michael Griffin, the administrator of NASA, kicked off the space agency's anniversary lecture series with an address at the Mayflower Hotel in Washington, D.C. on September 17, 2007. Excerpts of that address, and of the subsequent question-and-answer session, appear below, lightly edited for clarity.

Fifty years ago, space was a far off place. It was the stuff of science fiction. Today, it is pervasive in our lives, critical to a range of activities that create and provide value to human beings.

It grew from NASA's roots in space exploration... NASA was born and came of age during the Cold War—in a historical context that is difficult for many who were not there at the time to appreciate. It was a time when our very way of life was being called into question. The Soviet Union had declared that our democracy was too weak and too inefficient to compete with communism, and after the successful launch of Sputnik, there were many people in our country and in the world who feared that they might be correct. There were many others who were committed to proving them wrong.

The Moon race was more than exploration for its own sake, and it was a lot more than an exercise in national pride. It was considered a test of the viability of an open society, a vindication of the

very concept of freedom. The American people admired NASA's expertise, our derring-do or can-do attitude. These were a reflection of America itself. People marveled at our ability to meet John F. Kennedy's challenge to land a man on the Moon when we did it in just eight years and two months, a feat that seems ever more wondrous the more distant we grow from it. But it was even more than that: the Soviet Union had shown that success on the frontier of space could, and did, translate into power and influence in the world. In the Cold War, we were in a strategic competition for just such power and influence against a totalitarian regime whose core values were abhorrent to most Americans.

So, when Americans watched the Moon missions depart, our belief in freedom and in our way of life and in our hopes for a better life for our children and their children were riding along with the astronauts. For a moment, we could leave our anxieties about the larger struggle of the Cold War behind, and let our spirits soar into the skies, but we knew always in those years that we were locked in that struggle, and that it was playing out most visibly on the space frontier, and that we were finally winning.

Because of this, the connection between what we do at NASA and the daily lives of Americans at that time was immediate and intense. Even

more, these events were inspiring to the world, not just to the United States. Friends of mine who have come here from other lands tell me directly that the world was cheering us on because of the sheer magnitude of the accomplishment. Americans' self-confidence, our belief that we can do what we set out to do, drew admiration from across the world then as it does now, and NASA, then as now, was the embodiment of that spirit.

Today, we are in a very different world. The military and political competition has largely receded into the background; today we are primarily engaged in economic competition around the world. We increasingly live in a global economy where rising wealth and living standards also mean ever-heightened levels of competition.... There are now more software engineers in Bangalore, India, than in Silicon Valley. Japan, Taiwan, and South Korea together generate a fourth as many patents as does the U.S. every year, and their percentage is growing rapidly....

Economic growth and competitive success result primarily from the introduction of new goods and services or from finding more efficient ways to produce existing ones. That is, economic growth is driven by technological innovation. Societies that foster it lead the pack, and others lag behind. But if technological innovation drives competitiveness and growth, what drives innovation?

There are many factors, but the exploration and exploitation of the

space frontier is one of those. The money we spend—half a cent on the federal budget dollar—and the impact of what we do with it doesn't happen *out there*. It happens *here*, and the result has been the space economy. So, if America is to remain a leader in the face of burgeoning global competition, we must continue to innovate, and we must continue to innovate in space.

There is another factor driving innovation, also—and in my opinion, it is too often overlooked, or if it is seen, it is too often dismissed. Success in an economic competition depends upon *image* as well as *substance*. Companies the world over have a choice as to where to do deals and with whom to do them. The nation that *appears* to be at the top of the technical pyramid has taken a very large step toward being there in fact. Developing countries like China recognize the value of space activities as a driver of innovation, as a source of national pride, and as a membership in the most exclusive of clubs—that of spacefaring societies. It is no coincidence that we are seeing thousands of high-tech jobs starting up in China....

I don't think people broadly understand how capable today Russia, China, India are—not that we need to regard any of them as adversaries.... I personally believe that China will be back on the Moon before we are. I think when that happens, Americans will not like it, but they will just have to not like it.

I think we will see, as we have seen with China's introductory manned space flights so far, we will see again

that nations look up to nations that appear to be at the top of the technical pyramid, and they want to do deals with those nations. It is one of the things that made us the world's greatest economic power. I think we will be re-instructed in that lesson in the coming years, and I hope that

Americans will take that instruction positively and react to it by investing in those things which are at the leading edge of what is possible.... We should look hard for things that we as a nation and as a society can do that cause other people to want to bind themselves to us. To do that, we have to be a leader.