Where is My Flying Car Symposium

**Science Fiction Promises**

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“Science fiction promised many things, almost none of which has happened,” said Dr. Lawrence Krauss at the beginning of a February 2014 symposium at the American Association for the Advancement of Science meeting in Chicago. In addition, he said, science fiction has missed many things that have happened.

Krauss, Foundation Professor of the School of Earth and Space Exploration at Arizona State University and director of its Origins Project, was part of a panel of experts who gave their views on science fiction related to their respective fields in a symposium titled “Where’s My Flying Car.” As a theoretical physicist and cosmologist, Krauss cited examples of science fiction phenomena from his field, and gave his view about whether they are likely to become reality in the future.

Among the “promises” made by science fiction that have yet to occur,, Krauss spoke mainly about space travel and time travel.

Concerning space travel, he was not talking about current abilities to travel into space, but rather referring to space travel in the sense of science fiction stories. He discussed the extremes, where traveling through deep space is a common form of travel, and humans span the galaxy. An example he cited was from television series *Star Trek*, where the characters explore outer space and “boldly go where no man has gone before,” while traveling near the speed of light.

Despite the show’s popularity, Krauss was not optimistic about deep space travel becoming commonplace in the future or, at the very least, not in the sense that it has been hyped in science fiction. One main problem is with the human body, he said. The human body has adapted to be comfortable on Earth in relatively mild conditions. The earth shields humans from harmful radiation, and has a level of gravity that humans are adept to handle.

Space is far less desirable for the human body, Krauss explained. Humans are not designed to be in a minimal gravity environment, and even relatively short stints in space have caused problems for astronauts’ bones after arriving back on Earth. Additionally, astronauts are exposed to extremely harsh levels of radiation. While these effects are still being studied, as of now, prolonged space travel is too harmful and damaging to the human body to become common. Humans are simply not meant to be in space, Krauss said.

Another issue with space travel is the expense, particularly the cost of fuel. Even disregarding the cost of spaceships, according to Krauss, fuel costs rise exponentially as the desired speed increases. If the technology to travel near the speed of light were available, it would be far too expensive. Krauss hypothesized that if humans do eventually travel throughout space, it would be at a relatively slow pace to keep the cost low.

In addition to talking about space travel, Krauss discussed the possibility of time travel, particularly one as discussed in *The Time Machine*, by H.G. Wells.

The biggest issues with a time machine, he said, is that to make one that actually works, it would have to be a time machine and space traveling machine combined because the earth and rest of the universe is constantly in motion.

Even if it were possible, without these combined components, a singular time machine would bring people to the past or future most likely in space, nowhere near Earth. Krauss explained that a time machine would bring people to the same spatial location they left from, but because the earth is constantly moving, that location would no longer be on Earth. A machine that enabled people to travel through time would also need the ability to select coordinates in space, and know where Earth would be to travel to the same location, Krauss added.

In addition to pointing out that some aspects of science fiction probably would not become reality, he acknowledged that science fiction has missed many big technological creations that have actually influenced the world.

One was the creation of the atomic bomb. Although some early predictions got part of the concept correct, very few were accurate. An example Krauss gave was the novel *The World Set Free*, by H.G. Wells, which describes some aspects of the atomic bomb correctly, but also is mistaken in many regards. In the Wells story, the radioactive devices are not bombs, but rather areas of radioactivity that remain forever. Also, in this novel, the nuclear devices are used to establish world peace, rather than as a tool for war.

Krauss noted that another creation that science fiction did not predict was the World Wide Web, which is perhaps the most revolutionary achievement in modern time.

He ended by pointing out that science fiction is not futurology, and does not pretend to be. The important part of science fiction is that it inspires the imagination and makes people think about the future, he said.