A Trip as Far Away as Space-Time Will Allow
Scientists Contemplate Ideas, Impossibilities of Interstellar Transit

By Guy Gugliotta

Washington Post Staff Writer
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So: It's about 7:45 p.m. in Council Bluffs, Iowa, on a chill, blustery December night, when this "big round thing" with flashing red lights suddenly crashes in Big Lake Park, just off North Eighth Street.

Eleven witnesses, including cops and firefighters, either see the crash or rush to the scene within 15 minutes to watch the flames from the molten metal -- mostly carbon steel -- that covers the ground.

It happened on Dec. 17, 1977. The "big round thing" that local resident Criss Moore saw hovering in the air 25 years ago has never been explained.

No one knows if aliens are really blowing up their starships over Council Bluffs. But if extraterrestrial life forms are visiting from time to time, somewhere some sentient beings must have figured out a way to transit interstellar space. Discussions about unidentified flying objects march hand in hand with the feasibility of interstellar space travel.

Earlier this month, George Washington University and the Sci-Fi Channel sponsored a symposium at the university where serious people took up these two topics. Scientists agreed that we won't be doing star trips anytime soon, but "soon" may not mean much in the context of the cosmos.

"The universe is 14 billion years old," said symposium panelist Michio Kaku, a theoretical physicist from City University of New York. "Human civilization only began 5,000 years ago."

So give science a chance.

The trick, of course, is to be able to travel faster than the speed of light -- 186,000 miles per second -- which is as fast as anything travels in the world as we understand it, but not nearly fast enough to commute to stars. Our nearest stellar neighbor, Proxima Centauri, is 4.2 light years away.

There are glimmers about how this problem might be overcome. They involve bending space-time in such a way that one could scoot Enterprise-like through the cosmos.

One way is through "warp speed," implying that we can move faster than light through space-time by distorting space-time itself. The National Aeronautics and Space Administration (NASA) likens warp drive to a moving sidewalk: A person walks at one speed but travels much faster because the sidewalk moves as well.

Another way to distort space-time is by harnessing an enormous amount of energy -- like that of an entire star -- to create a pathway, or "wormhole," connecting two points that used to be separated.

Suppose, Kaku said, "you wanted to get from one side of a rug to the other, and instead of walking across, you used a big hook to pull the other side of the rug close to you. Then you just stepped over." By crumpling the rug, you built the wormhole, Kaku said: "It's like Alice Through the Looking Glass -- you start in Oxford, then step through the wormhole and you're in Wonderland."

Which is where all of this is right now. The theories are neither proven nor discounted, the science doesn't exist to describe these phenomena with the necessary rigor, and the engineering needed to pull off the technological feats can't even as yet be contemplated.

"I like to speculate about this stuff as much as the next guy, but it's really hard to do," said Ralph L. McNutt Jr., chief scientist for the Space Department at the Johns Hopkins University Applied Physics Laboratory. "There is no obvious way of getting to warp drive out there."

Instead, McNutt would test the limits of the real world. He is leading a team that has suggested to NASA's Institute for Advanced Concepts the possibility of sending a 340-pound probe powered by nuclear generators into interstellar space to a distance of 93 billion miles from Earth. "It's still not far away," McNutt said, noting that a light-year is more than 63 times farther, but it will test the current limits of technology.

At NASA's Jet Propulsion Laboratory, scientists have moved a bit further with what the laboratory's Henry M. Harris calls the "proof of concept" for a "beamed energy sail" that could cut travel time to Proxima Centauri from 400 centuries (in a rocket) to a mere 40 years.

Using a lightweight, high-temperature-resistant, carbon-based sail material, the JPL proposal envisions a starship pushed deep into the solar system by a huge laser: "We could get to Jupiter in eight hours and be moving at a tenth of the speed of light," Harris said.

Harris said that JPL and the sailmaker, Energy Science Laboratories Inc. of San Diego, have accelerated small sails in vacuum chambers "at a few g's" and that "we can extrapolate that material for a spacecraft accelerating at 100 g's." One g is the measurement of the force of gravity on an object at rest on Earth.

But 10 percent of light speed still isn't very fast, and "we can't go much faster," Harris said, because even a speck of dust "could do serious damage in a high-speed interstellar collision."

So the message is that comfortable, interstellar space travel -- at least by Earthlings -- is not on for now. But will it ever be?

This is a hard question to get at, but what evidence there is suggests that thinking people believe it will. GWU panelist Peter Sturrock, an emeritus physicist from Stanford University, suggested

that scientists tend to give credence to UFO reports -- as long as they are polled by secret ballot.

Ted Roe, executive director of the privately funded National Aviation Reporting Center on Anomalous Phenomena, found in an aircrew survey of a major airline that 25 percent of the respondents had seen something they couldn't explain, but virtually no one had reported it. Aircrews, like untenured physicists, can get the sack for reporting a UFO sighting.

But if UFOs are real, then so is interstellar space travel, even though "when you talk about going faster than light speed, then you're talking about [harnessing] the energy of stars," Kaku said.

For Earth, this is probably attainable in "100,000 to 1 million years," Kaku added. "When I look at the age of the universe, I see that we've attained technology in the blink of an eye. There's plenty of time."

Others are not so sure. Princeton astrophysicist J. Richard Gott III invoked the Copernican Principle -- a bedrock tenet of the scientific method -- which holds that nothing is "special."

If interstellar space travel were common, then "the Earth would have been colonized by extraterrestrials a long time ago," Gott said. "The Copernican Principle tells us that a significant fraction of the intelligent observers in the universe must be sitting at home on their own planets, or they'd be special. If they aren't, then we're special."