

Sunday, October 16, 2005 · Last updated 2:11 p.m. PT



Space babes? Sorry. Aliens more likely single cells

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Bad news, Battlestar Galactica fans:

If there is life on other worlds, it probably doesn't look like a swimsuit model.

A scientist at Washington State University says the first extraterrestrial life we find is likely to be single-celled organisms surviving in a moon of Saturn, or the atmosphere of Venus.

And not a Borg Queen in sight.

Dirk Schulze-Makuch recently co-authored the book "Life in the Universe," in which he and Louis N. Irwin of the University of Texas-El Paso theorize on where humans should look for signs of other life.

It has been a lifelong interest for Schulze-Makuch, one of a small cadre of astrobiologists who ponder

where earthlings will first find proof that we are not alone in the universe.

"Already as a little boy I was looking at the stars and wondering what could be out there," he recalled during a recent interview in his office. "I liked Star Trek too."

He was raised in Geisen, Germany, got a doctorate from the University of Wisconsin-Milwaukee and previously taught at Texas-El Paso, where he began working on contracts with NASA. Last year he was hired at WSU, not normally a hub of interstellar activity.

Schulze-Makuch contends that the best chance of finding some life in our solar system is on Titan, the largest moon of Saturn, which has an atmosphere.

Four billion years ago, when life originated on Earth, the environmental conditions here were similar to those on Titan, Schulze-Makuch wrote in a recent paper.

"Life may have originated on Titan during its warmer early history and then developed adaptation strategies to cope with the increasingly cold conditions," he wrote.

Single-celled organisms could be living in the atmosphere or in the surface ice of Titan.

There could also be organisms living in the dense atmosphere of Venus, which is much thicker than Earth's, he said.

"Life is really hardy. It's hard to get rid of it," he said. "The individual is fragile."

Schulze-Makuch's work is no reason to abandon the Search for Extraterrestrial Intelligence, said Dr. Seth Shostak, senior astronomer for the SETI Institute in Mountain View, Calif. He noted there are likely

hundreds of billions of planets in our galaxy.

"Most of those will be sterile, admittedly, but it would be remarkable if none of them sport biology," Shostak said.

Complex life requires more salubrious circumstances, so it will occur less frequently, Shostak said.

There is debate in the scientific community about whether intelligent creatures would look like us, since there are many body designs that would work, Shostak said. But some scientists argue that the basic humanoid shape is excellent for intelligent beings, he said.

Before we encounter something like the negligee-clad Number 6 from *Galactica*, the television series that features a genocidal war between humans and their robot creations, we'll probably be looking at E.T. through a microscope, Schulze-Makuch said.

His book is designed to expand the parameters of the search for extraterrestrial life.

People should not be looking only for life forms similar to carbon-and-water species on Earth, he said. On another planet, life might exist in a magnetic field. And instead of water it might require methane.

That's important to remember in designing space probes, he said. The probes should be able to detect completely different forms of life, he said.

One issue is that there is no good scientific definition of what exactly is life, he said. Mostly it's based on genetic code, and mechanical requirements like a membrane and energy source, he said.

"Are viruses life? They cannot reproduce," he said. "But I consider them alive."

If there is life on Titan, it is a near certainty that it will be "independent Genesis," that is, developed completely without ingredients from Earth. By contrast, any life found on Mars or Venus might be from bacteria that hitched a ride on a space probe or even a meteorite, he said.

"They could be our cousins," he said.

Or, life on Earth could have originally come from Mars, he said.

He believes it's time for humans to create a permanent space base on Mars, and to more aggressively explore other bodies in our solar system. The best way is through robotic missions, because human flight is too difficult and expensive.

Higher life would probably be found in another solar system, he said.

"I think it will be in our lifetime," he said. "I think we are on the verge."

Origin:

Seattle Post Intelligencer - USA