

Astronomers meeting in Rome share discoveries, dreams of finding life

ROME - Normally filled with theology students, the creaking classroom seats of the Pontifical University of St. Thomas Aquinas were crammed with planetary scientists and astronomers from all over the world.

Overhead screens flashed slideshows of planned space missions and colorful graphs as dozens of speakers and nearly 600 participants shared their latest discoveries and dreams of finding extraterrestrial life in the universe.

"Mars is still a very intriguing object with a high probability of life being somewhere under the surface or some traces of life remaining," Jesuit Father Pavel Gabor told Catholic News Service Sept. 21.

The Czech priest works at the Vatican Observatory in Tucson, Ariz., and was one of a number of Vatican astronomers who took part in the European Planetary Science Congress Sept. 19-24 at the university.

Scientists have known for some time that liquid water, which is needed for life, was once present on the surface of Mars during its early evolution, he said.

There are other clues, too, pointing to possible organic activity on the Red Planet, such as the mysterious presence of methane in its atmosphere.

Manish Patel, a researcher at the Open University in the United Kingdom, said something may be producing the methane "because it really shouldn't exist in the atmosphere for long at all and if it does exist it should break down (and disappear) very quickly."

It could be coming from some geological process or release, he said, or, like on Earth, the methane could be coming from biological activity or living organisms.

To find out, Patel is helping build an instrument to detect traces or signs of life that will be part of a NASA-European Space Agency mission to Mars' atmosphere in 2016.

Larry Esposito teaches astrophysical and planetary sciences at the University of Colorado in Boulder. His specialty, he said, is Saturn's rings, which are made of little bits of dust and "almost pure ice, the sort of stuff you could use to cool a drink."

The university built one of the experiments currently being conducted on the Cassini-Huygens spacecraft as it orbits Saturn.

He said the data coming in over the past six years has suggested that some of Saturn's rings were formed when the planet formed 4.5 billion years ago and that other rings are "newer," being just 100 million years old.

Esposito said he suspects the rings, which are "thinner than a pancake," formed after a surrounding icy moon shattered to pieces.

"Saturn is recycling its icy material," he said. "The moons that are in orbit around Saturn get broken into pieces, the pieces come back together to form new moons and then they're broken again."

One session at the congress focused on future missions, especially to Venus, that would use metallic balloon probes to study atmospheres and use missile-shaped "micro-penetrators" to crash deep into planetary or moon surfaces and drill for samples.

Father Gabor, who designs instruments that gather data about the atmosphere of planets outside the solar system, said the congress "is a melting pot of people who come to talk about their research" and to network.

The sensor he designs may be able to detect life by picking up the color, that is, the composition, of an extremely distant planet's atmosphere, he said.

"If you have a planet that harbors life it is very likely that this life has already changed the composition of the atmosphere," he said, just like life on Earth has created an anomalously high concentration of oxygen.

“If you were an extraterrestrial looking at the Earth, you would know there was something strange happening here,” he said.

While scientists don’t expect to find little green men, life may exist or may have existed in the form of microorganisms.

Learning more about the cosmos is important for “feeling at home in the universe,” which is a feeling that is closely linked to faith, said the Jesuit priest.

“I think our faith leads us to seeing the world around us as a gift from a very munificent God, a God who gives very freely and generously,” he said.

“And if we find any life outside this planet, it will mesh in very nicely with that idea of God, who is such a generous giver,” said Father Gabor.