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Kicker

There May Be Life Out There

Associate professor studying distant, habitable planet

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The Shorthorn staff

We are probably not alone.

Our terrestrial neighbors in the Gliese 581 Planetary System might just be amoebas, but that's life. And researchers around the Earth are scrambling for details.

Physics associate professor Manfred Cuntz received international notoriety for studying a distant planet and determining it meets habitat requirements to sustain life. Reports about Gliese 581d, a planet more than 20 light-years away, confirm the surface temperatures could support life thanks to the greenhouse effect.

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Constellation art courtesy of UTA Astronomy Lab

"We worry about the Earth warming up," Cuntz said Monday. "In this case, that greenhouse effect is a positive thing. That's what makes it habitable."

The astrophysicist collaborated with a team at the Potsdam Institute for Climate Impact Research in Germany. He provided the planetary movement research and verifications while other members studied climatology under the direction of Dr. Werner von Bloh. Their conclusions appeared in Astronomy & Astrophysics magazine last month and The New York Times last week.

"This is very important," Cuntz said. "And it is very complicated. This affects science, philosophy, psychology and more."

The three planets in the system have conditions closest to Earth's that the science community has discovered. A Swiss research group first announced the commonalities in April, which drew attention and scientific scrutiny to their ideas. That's when the Germany-based team initiated its climatology investigations.

Results indicate Gliese 581d, the third planet in the system in the Constellation Libra, has temperatures where water could exist.

By incorporating planetary thermal evolutionary studies, the cooling of the planetary body since its formation, and the connected geodynamic parameters, von Bloh's team determined that just one of the planets, 581d, was actually within the habitable temperature range. Gliese 581d is farther from its sun than Earth is from its sun, but the greenhouse effect raises the planet's temperature to habitable ranges.

Jane Platt, media relations specialist at Jet Propulsion Laboratories in California, said mission plans are underway for NASA's Terrestrial Planet Finder and the European Space Agency's Darwin to study terrestrial planets beyond Earth's solar system. The mission will attempt to detect biomarkers, molecules

that indicate living organisms are or were present, in the atmospheres of the Gliese planets.

Cuntz said the 2014 mission date is approaching quickly as plans, schedules, requirements, technological developments, science community interaction, funding, political support and international collaboration must be addressed.

Dr. Jaymie Matthews, a member of the international scientific community focusing on Gliese, released his findings this week in Canada. The University of British Columbia associate professor has been working on the Gliese project since May. His independent research team confirms the research of the Swiss and German teams.

“The Gliese 581 system is the first to be found beyond our own Earth that might have a livable planet,” Matthews said. “It took approximately 3.5 billion years for life on Earth to reach the level of complexity that we call human. Gliese has been around at least that long, so it’s more encouraging for prospects of complex life.”

Matthew’s group classified Gliese 581 as a “home star” able to sustain life on planets around it. He and his team measured subtle variations in light from the star using the Canada Space Agency’s Microvariability and Oscillations of STars telescope.

He said the suitcase-sized space observation system, nicknamed the Humble Space Telescope, has an incredible ability for observing changes in brightness.

Bloggers are praising the telescope and the Gliese research initiative. Astroblog owner Ian Musgrave summed up the possibilities.

“We can at least speculate that on Gliese 581d the global ocean might be teeming with ... something,” he said.