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UTA prof draws notice for planet work

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One of the biggest quests for real estate has nothing to do with square footage.

It's the hunt for livable space light-years away.

North Texas researchers are involved in the effort that so far has found more than 200 planets outside our solar system -- some of which might be able to support life -- in just over a decade, more than three dozen of them this year alone.

And the pace of discovery of these exoplanets is expected to continue.

"We don't want to just find planets," said Doug Ingram, an astronomer at Texas Christian University. "We want to find Earth-like planets because they have a possibility of supporting life.

"The question of 'Are we alone?' is very important one," he said. "Whether the answer is 'yes' or 'no,' it will be extremely interesting and help us to establish our place in the universe."

The international space race has been revived in recent years as China, Russia and other nations expand their programs and President Bush continues his push to put Americans back on the moon by 2020 and send a mission to Mars by 2030.

Texans have a big role: NASA's Johnson Space Center is in Houston, and researchers are involved in everything from aerospace science to determining whether newly found planets can sustain life.

New discoveries

A local professor recently drew national attention for helping research a possibly Earth-like planet discovered this year.

Manfred Cuntz, an associate professor of physics and co-director of astronomy at the University of Texas at Arlington, was on a four-person team that debunked a theory that the planet Gliese 581c could sustain life. Found circling a star in the constellation Libra, the planet was initially believed to have the potential because it was in a "habitable zone" where water and life can exist because it's not too hot or too cold.

Cuntz's team studied the conditions on Gliese 581c and realized that the original calculations may not have accounted for the greenhouse effect warming the planet. Cuntz and fellow researchers recalculated conditions and learned that the greenhouse effect could warm the planet up to more than 200 degrees

Fahrenheit.

"It would be too hot and couldn't sustain water," Cuntz said. "The planet has a sick atmosphere and generates extra heat."

But they kept looking and began to examine another planet known as Gliese 581d.

At first they thought it would be too cold, but then they realized that the same greenhouse effect that would make Gliese 581c too hot could warm the second planet enough to sustain water or life.

"It's very intriguing to find that the planet originally overlooked was actually habitable," Cuntz said.

The discovery, on which the group wrote a paper for the *Astronomy & Astrophysics* journal, has been cited in articles from New York to France.

"We wanted to be first with the discovery," Cuntz said of the study, which took less than two months. "We were prompted by the urgency of research.

"I was told by colleagues: 'You want to work on this? Work fast,'" Cuntz said with a grin.

Some astronomers question whether this research is exact or whether the results could be swayed by other factors such as whether a planet's atmosphere is thin or thick.

But they say the way to find out is to wait for planned NASA missions such as the Terrestrial Planet Finder or the Kepler Mission, which could provide information to support or disprove theories.

Texans at work

Other Texans are playing a role, at six universities working with NASA to advance aircraft and aerospace science through a research program. Workers from Texas A&M, Rice, Prairie View A&M, the University of Houston, Texas Southern and UT-Arlington have been building structures for spacecraft and aircraft.

This work began in 2002 and should wrap up at the end of the year, said John Junkins, a distinguished professor in the Texas A&M department of aerospace engineering.

Meanwhile, TCU professor Pamela Marcum is on leave from the university, working at NASA in Washington, D.C., as the discipline scientist for the Kepler Mission, which will search for Earth-like planets.

And scientists in West Texas are using telescopes at the McDonald Observatory to try to examine possible exoplanets.

Looking ahead

As this research proceeds, President Bush's proposal to build a space vehicle that could put people back on the moon continues to draw resistance in Congress.

His 3-year-old plan puts billions of dollars toward the moon and Mars missions, changing the focus from the space shuttle to next-generation space vehicles that are still being developed. But competition for federal dollars is fierce, and Bush's plan is far from a done deal.

No matter what happens in Congress, researchers say, the search for planets with the potential to sustain life continues.

"There are many groups worldwide using a variety of techniques to discover new planets," said Craig Wheeler, an astronomer with the University of Texas at Austin. "The goal is to find one like, and as small as, Earth.

"Finding life of any kind elsewhere would revolutionize science, and likely humanity."