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Evidence of new planets sparks talk of 'other life'

PASADENA, Calif. (AP) — The strongest evidence yet that planets surround a nearby star has renewed speculation about possible "life on other worlds," says an astronomer who took the first photograph of what may be a young solar system.

Scientists had previously identified about 40 stars that may be orbited by dust, ice particles and other solid material. But they say a photograph released this week is the first direct evidence that some of the material around one of those stars — Beta Pictoris — has coalesced to create planets.

"Planetary scientists believe that (the process leading to) the formation of the Earth and our solar system is a very common occurrence, but we never had proof that it happens elsewhere," said Richard Terrile, an astronomer at the Jet Propulsion Laboratory.

"Now, we're beginning to see that it is a common occurrence," said Terrile. "If one extends that even further, then you get to the question of life on other worlds. That's the next step."

The new computer-enhanced photograph provides the clearest look at Beta Pictoris, which at 471 trillion kilometres from our sun is a relatively nearby star. Terrile and astronomer Bradford Smith of the University of Arizona took the photograph through the 250-centimetre optical telescope at the Carnegie Institution's Las Campanas Observatory near Serena, Chile.

The photograph shows two faint streaks of light which represent "a vast swarm of solid particles, called a circumstellar disk, surrounding the nearby star" and extending to a distance of 64-billion kilometres, spokesman Mary Beth Murrill said.

Terrile and Smith believe the disk surrounding Beta Pictoris is made up of countless particles ranging from the size of tiny grains less than a thousandth of an centimetre in diameter to cometary nuclei a few kilometres across.

"The brightness of the star seen through its disk indicates that the inner-most particles of the disk may have been swept away," Murrill said. "The formation of planets (as particles near the star

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coalesce) would produce such an effect. But the astronomers say they have not been able to determine if there are actually planets around the star."

"We're finding the next generation's new worlds," Terrile said, adding that the photograph provides the first direct, although "weak, observational evidence for the existence of planets.

"I don't think anyone in the world feels more excited than Brad Smith and myself," he said. "The observations were made in April, but we wanted to make sure what we had" before making the announcement.

A key question is whether Beta Pictoris — which probably is only a few hundred million years old compared with our sun's 4.5 billion years — is old enough to have planets around it.

Last year, a heat-detecting telescope carried into Earth's orbit on the Infra-red Astronomical Satellite, or IRAS, identified four stars that may be surrounded by solid material — Beta Pictoris, Vega, Fomalhaut and Epsilon Eridani. Ground-based optical and infra-red telescopes have also identified solid material that may be the early stages of solar systems around three other stars — HL Tauri, R Monocerotis and Lynds 1551-IRS 5.

In June, astronomers meeting in Baltimore announced that IRAS had identified more than 10 nearby stars showing excess infra-red emissions, and suggested those stars might be orbited by solid material or even planets.