First planet outside this solar system believed detected

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WASHINGTON — A team of Arizona astronomers has detected what is believed to be the first planet discovered outside this solar system, the National Science Foundation announced.

The new planet orbits around the faint star called Van Biesbroeck 8, located in the Milky Way constellation Ophiuchus. Named for George Van Biesbroeck, the Belgian-born American astronomer who discovered it in 1961, the star is 21 light years (about 123 trillion miles) from Earth. A light year is the distance light travels in a year — nearly 6 trillion miles.

The Arizona astronomers gave the object orbiting Van Biesbroeck 8 the rather pedestrian name of VB 8B. It is approximately as big around as Jupiter, another gaseous planet, but is believed to be 30 to 80 times as heavy.

The gaseous planet has a surface temperature of 2,000 degrees Fahrenheit and is "as hot as a blast furnace," Donald W. McCarthy Jr., the University of Arizona scientist who led the research team that spotted the planet, said Monday.

McCarthy emphasized that further studies must be done to determine the object's orbital period, its mass and its chemical composition. "The body identified as a planet is too dim and too cool to be a star," McCarthy said.

But he said that the discovery, if verified and followed by other such sightings, could provide valuable information on how solar systems develop and, ultimately, whether life could exist on other planets.

"Conditions for life may be so unique that we may be the only ones," McCarthy said. "but this is a step in the right direction of trying to find out. What we really want to do is find systems of planets around other stars."

Thus far, McCarthy said, astronomers could only surmise that planets existed near stars that showed "a sort of wobbly motion," possibly caused by gravitational pull from a nearby object.

But astronomers had not been able to spot relatively cool planets orbiting in the intense light that surrounds nearby stars. "It's easy for a planet to be lost in the glare," McCarthy said.

The star orbited by VB 8B is 10,000 times fainter than the dimmest star visible to the naked eye, and the planet is 100,000 times fainter than the star.

Astronomers were able to spot the planet through a relatively new technique known as speckle interferometry, which detects infrared heat. Unlike many other planets that may exist in space, McCarthy said, VB 8B generates its own heat. Astronomers call such objects "brown dwarfs" because they are too small and cool to be stars.

McCarthy, University of Arizona colleague Frank J. Low and Ronald G. Probst of the National Optical Astronomy Observatories, an organization under contract to the government-sponsored National Science Foundation, share an interest in brown dwarfs and have studied the object since May at two Arizona observatories.

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