

Astronomers find a new face in the crowd

Astronomers have discovered yet another planet outside the solar system. All right, stifle that yawn.

A bit of ennui is forgivable. Last October, researchers made front-page headlines when they announced the first discovery of an extrasolar planet orbiting a sunlike star (SN: 10/21/95, p. 260). A year later, scientists had half a dozen similar discoveries in the bag.

Several features of the latest finding make it anything but commonplace, however, researchers reported in Tucson this week at the annual meeting of the American Astronomical Society's Division of Planetary Sciences.

The parent star, 16 Cygni B, closely resembles the sun in mass and atmosphere and is widely regarded as the sun's twin. Moreover, 16 Cygni B is part of a three-star system. One of its companions is remote, but the other, 16 Cygni A, lies less than 160 billion kilometers away—a distance about five times the diameter of the solar system.

Although astronomers have twice before found planets in binary star systems, those stars do not orbit each other as closely as 16 Cygni A and B do. Theorists have speculated that the gravitational tussle between two closely orbiting stars might prevent planets from forming. This tug-of-war may disrupt the

vast disk of gas and dust that girdles young stars and gives rise to planets.

Since half of all stars are believed to have stellar companions, the new report may bode well for those hoping to find planets around many other stars, notes William D. Cochran, an astronomer at the University of Texas at Austin and a discoverer of the new planet.

"Mother Nature is very clever, and she forms planets any way she can," comments Michal Simon of the State University of New York at Stony Brook.

The newly found planet sports some unusual features. The tiny body, too faint to be seen against the glare of its parent, has an orbit far more elliptical than that of any other known planet, inside the solar system or out. The planet's average distance from 16 Cygni B is about 1.7 times Earth's distance from the sun, or 1.7 astronomical units (AU). However, it ventures as close to 16 Cygni B as 0.6 AU—slightly less than Venus' separation from the sun—and as far away as 2.8 AU—almost double Mars' average distance.

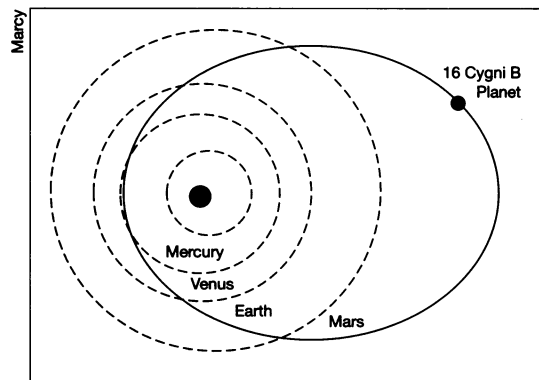
Among the planets detected over the past year, only the heaviest, with several times the mass of Jupiter, have had elliptical

The planet orbiting 16 Cygni B as it would appear if it were in our solar system.

tical orbits. Theorists have suggested that such objects are not planets but brown dwarfs, dim objects that form as stars do (SN: 1/27/96, p. 52). The new planet is an exception: Although it has an elongated orbit, its mass, about 1.6 times that of Jupiter, makes it too small to be a brown dwarf.

Two teams of astronomers independently inferred the planet's presence from a telltale wobble in the motion of 16 Cygni B. Cochran and Texas colleague Artie P. Hatzes have tracked the star since 1988 at McDonald Observatory in Fort Davis. Geoffrey W. Marcy of San Francisco State University and R. Paul Butler of San Francisco State and the University of California, Berkeley measured the wobble over a span of 9 years at Lick Observatory on Mount Hamilton in California.

— R. Cowen



Genetic discrimination: A prejudice is born

She is unusually tall, with an expansive reach and long, reed-thin fingers and toes—traits marking a condition so distinctive that ancient physicians named it arachnodactyly, after the Greek word for spider. But it was her honesty, not her skeletal disorder, that nearly cost the woman her job.

She was fired the day after she told her employer, a law firm, that she had the genetic anomaly now known as Marfan syndrome. She got her job back only after she threatened to haul her employer into court.

This story is true. And although the woman's name has been withheld to protect her from further discrimination, she is not alone. A study in the Oct. 25 SCIENCE indicates that nearly one-fourth of members of support groups for a variety of genetic disorders report that they have experienced discrimination.

"I'm inclined to believe that although the numbers may vary in other studies, this is a problem our society needs to deal with," says E. Virginia Lapham of Georgetown University in Washington, D.C., an author of the report.

The study, funded by the government's Human Genome Project in Bethesda, Md., is the most extensive attempt so far to document genetic discrimination. Although

just 3 percent of children are born with rare genetic anomalies like Marfan syndrome, researchers say the pool of potential victims of discrimination will expand each time science pinpoints a gene, or group of genes, that raises a person's risk of developing such illnesses as heart disease or breast cancer.

Measuring the true extent of the problem may prove challenging, however, because of widespread fears about the misuse of genetic information should it fall into the hands of insurers or employers.

To locate people who might be willing to cooperate in such a study, Lapham and her colleagues contacted more than 100 support groups, with a combined total of 585,000 members, and asked for volunteers. Ultimately, only 332 people from 44 states and the District of Columbia agreed to participate. Each person was asked, among other things, whether he or she or a family member had had problems with health insurance, life insurance, or employment.

The researchers found that 25 percent of the volunteers believed that genetic information had been used to deny them or members of their families life insurance; 22 percent believed the information had been similarly misused by health insurers; and 13 percent believed

the information had led to job discrimination.

The study confirms what many researchers have long suspected, says Kathy L. Hudson, policy coordinator for the Human Genome Project. "People believe genetic information has been used to discriminate against them." This concern already presents an obstacle to genetic research, she adds. "One of the principal reasons people give for not participating in studies is the fear that this information will get out and be used against them."

Richard Coorsh of the Health Insurance Association of America (HIAA) in Washington, D.C., notes that the study reflects perceived—not necessarily actual—discrimination. "Perceptions are difficult to quantify," he says. "It's difficult to know any more about this without checking the particulars of each case." He says that as far as he knows, no member of HIAA plans to require that applicants take genetic tests.

Martha Volner of the Alliance of Genetic Support Groups in Chevy Chase, Md., which collaborated on the study, says insurers don't need genetic test results in order to discriminate. "They can require you to submit 5 years of medical records, they can ask what your family members have died of—there are many ways to get that information without directly posing the question of genetic disorders."

— S. Sternberg