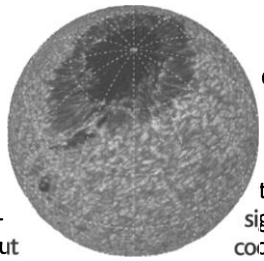
The Planet That Wasn't



Starspot model.

Since 1992, astronomers have discovered about 70 planets circling stars other than our sun. But another putative planet turns out to have been an illusion produced by a maverick starspot.

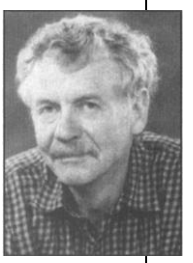
An extrasolar planet betrays its presence by the pull of its gravity, which tugs its parent star back and forth as it orbits. A wobbling star emits a distinct spectrum, which shifts slightly toward the red end and then toward the blue. Analysis of this periodic shift reveals the planet's mass and distance from the star.

In 1998, a team led by astronomer Didier Queloz of the Geneva Observatory in Switzerland nearly announced that HD 166435, a sunlike star 80 light-years away, fit that pattern, suggesting that it had a Jupiter-size companion. But subsequently astronomer Greg Henry of Tennessee State University in Nashville found that the star's brightness waxed and waned in the same 3.8-day period as the apparent wobble. When Queloz and colleagues scrutinized HD 166435's spectrum further, they saw signs that the star is young and active, with dark, cool spots on its surface. They realized that no planet was called for to account for its behavior: As the star spins, the spots create the illusion of a wobble.

The researchers were fooled at first because the same patterns persisted for months, says Queloz, whereas starspots usually appear randomly. That may mean HD 166435 has unusually stable magnetic fields, the team speculates in a report to appear in the journal *Astronomy and Astrophysics*.

But this poses a problem for theorists. "I'm not sure anyone knows what the heck is going on with this star," says planet hunter Debra Fischer of the University of California, Berkeley. She and Queloz are confident that no such trompe l'oeil accounts for any of the other extrasolar planets discovered so far.

Genetics Prize for Jaenisch



Jaenisch

Rudolf Jaenisch of the Massachusetts Institute of Technology has been awarded the Peter Gruber Foundation's first annual genetics prize for his pioneering work in gene transfer in mice. Described as a "relentless experimentalist," Jaenisch, 59, is credited with developing gene mutations in mice that make it possible to study a variety of human diseases in animals. Jaenisch has also been dipping into science policy: This summer he was in Washington, D.C., just before the House passed an anti-cloning bill, to plead for an exemption permitting "therapeutic cloning" of human embryos for research.

Jaenisch was to receive the $150,000 prize on 13 October in San Diego at the meeting of the American Society of Human Genetics.

Tea ceremony good for vision?

Fighting Cataracts With Tea

Indian scientists have found hints that compounds in tea may help stave off cataracts, the cause of 40% of all cases of human blindness.

Tea has a reputation for salubrious effects on various illnesses in part because it is a rich source of antioxidants, compounds that mop up the unstable oxygen molecules, or free radicals, that wreak havoc on bodily tissues. Now it appears that those antioxidants may help fight cataracts, at least in rats, according to preliminary work by a team headed by molecular biologist Dorairajan Balasubramanian at the L. V. Prasad Eye Institute in Hyderabad.

In experiments using baby rats, the scientists injected a substance that led to cataracts, a clouding of the transparent lens that sits behind the iris. Then, for 12 days, the rats were given daily injections—equivalent to half a dozen cups of tea for a human—of either green tea extract, black tea extract, or saline solution. At 6 weeks of age, the rats were sacrificed and their lenses removed.

The rats treated with tea had less advanced cataracts, suggesting that tea extracts "relieve oxidative stress," the scientists report in the September issue of *Experimental Eye Research*.

Natalie Kurinij, an epidemiologist at the National Eye Institute in Bethesda, Maryland, says that eye researchers have long been interested in the compounds in tea, but "the relationship of tea extracts to cataracts is relatively new." Balasubramanian notes, however, that the Chinese, among the world's heaviest tea drinkers, have a below-average incidence of cataracts.

Canaletto Had Scientist's Eye

Many 18th century paintings are known for their realism. But the work of the Italian painter Canaletto is so precise that scientists can use it to document sea-level change from 140 years before the first official records were kept.

To meet the voracious demand for high-end souvenirs of Venice, Canaletto used a portable camera obscura to help him crank out a picture-perfect painting of Venice about every 3 days over more than a decade during the 1730s and 1740s, says Dario Camuffo, a climatologist at the Italian National Research Council in Padua. The artist was so accurate that he even captured a layer of algae, indicating the high-tide line, on the sides of the canals. This enabled Camuffo, who studied more than 100 of Canaletto's paintings, to calculate the rate of increase of the sea level in the Venice Lagoon. He calculated a rise of 2.7 mm per year—which matches official measurements begun in 1871 that show a rise of 2.4 mm per year. "I was surprised that these two kinds of data fit so well. It was astonishing," says Camuffo, who presented his findings at a research briefing on Europe's cultural heritage last week in Venice. Knowing the rate could help predict future sea-level change, he says.

CREDITS: (TOP LEFT) KAREL SCHRIJVER/LOCKHEED MARTIN; (TOP RIGHT) PETER GRUBER FOUNDATION; (MIDDLE) PALLAVA BAGLA; (BOTTOM) "LA PUNTA DELLA DOGANA," KUNSTHISTORISCHES MUSEUM, VIENNA (ART RESOURCES)