Soccer fans affect referee performance.

Crowds Provide Home Advantage

A hometown crowd can really be a 12th man on the soccer field. Scientists have found that referees are less likely to call a penalty on the home team under pressure from boisterous fans.

Sides in the English Premier League are statistically almost twice as likely to win on their home pitch than away. Various theories have been suggested, from increased testosterone levels of the home squad to the discomfort of travel. Now researchers provide evidence that it's the referees, not the players, who make the difference.

Biostatistician Alan Nevill of the University of Wolverhampton, U.K., and colleagues showed 40 referees video footage of 47 tackles and asked them to judge whether they were fouls. Half the referees watched the tackles with the sound off while the others heard the usual hoots, chanting, and applause from the crowd. Those viewing the tackles with background noise were more uncertain in their decision-making. Although they did not call more penalties on the visiting team, they called 15% fewer fouls on the home team, the researchers report in an upcoming issue of the *Journal of Sport and Exercise Psychology*.

Nevill speculates that the referees were trying to avoid the wrath of home fans. Biological psychologist Nick Neave of the University of Northumbria, U.K., says the study "adds another piece of evidence that crowd noise affects the referee."

Happy to Be ... a Biologist

The best job in the United States is that of biologist, according to this year's ranking by the *Jobs Rated Almanac*.

Biologists have moved up from 23rd place a few years ago to displace financial planners at the top of the heap. The almanac rates jobs according to stress levels, pay, degree of autonomy, physical demands, job security, and market demand. The rankings are based on government labor and census data, combined with surveys conducted by trade and industry groups.

"I'm not surprised," says Howard Garrison, spokesperson for the Federation of American Societies for Experimental Biology. "They all love their work." Garrison, a sociologist by training, says you can't beat that combination of intellectual stimulation and the opportunity to improve people's lives.

Two other scientific disciplines are also in the top 10: meteorology and astronomy.

White powder in vial is nanodiamonds.

Diamonds in the Sky

A subtle pattern imprinted upon ultraviolet (UV) light from nearby stars suggests that diamond dust drifts in the vast spaces among stars.

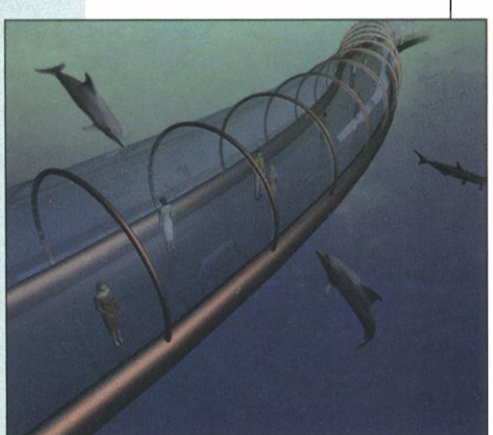
The first evidence of diamonds in outer space turned up about 15 years ago, in meteorites. Nuclear reactions and intense pressures in ancient supernovas forged the grains, which wound up in asteroids—the source of the meteorites—when our solar system formed about 4.6 billion years ago. Because the meteorite diamonds absorb infrared light similarly to the dust around young stars, scientists surmised that grains still in space must be concentrated around newborn stars. Now, a separate spectral pattern in UV light suggests that diamond dust is widespread throughout space. A team led by astronomer Geoffrey Clayton of Louisiana State University in Baton Rouge used the Hubble Space Telescope and satellite UV data to examine the light from several stars. A faint but distinct pattern, known to arise only from diamond grains, appeared in every direction the team looked, they report in the 10 June issue of *Astrophysical Journal Letters*.

Because diamond grains are nearly indestructible, Clayton's team estimates that the Milky Way now contains about 10^{41} grams of diamond—nearly a million trillion trillion trillion carats.

The new finding is "intriguing," says astrophysicist Walter Duley of the University of Waterloo in Ontario, Canada. But he notes that the team hasn't yet determined whether other substances could produce a similar UV pattern.

Spain Makes a Splash

With 10,000 sea creatures in 42 million liters of water, the Oceanographic Park in Valencia, Spain, billed as Europe's largest aquarium, will open later this year. Part of a big arts and sciences complex, the $370 million project has a scientific mission: to protect and restore Mediterranean fauna. It's also expected to be a major draw for tourists. It features a 320-square-meter underwater acrylic dome, seven pools representing different water habitats, and a 70-meter underwater tunnel through a "tropical sea" that includes a spectacular kelp forest.



Artist's rendering of undersea catwalk.

The park aims to become the first European center to breed dolphins in captivity. It also plans a major focus on sea turtles, including a center to treat animals injured by fishing hooks and a tagging project to track their migrations.

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