

RANDOM SAMPLES

Edited by Constance Holden



Gravitational superhighway snakes through the solar system.

by that, Jaffe began collaborating with scientists at Caltech, JPL, and Georgia Tech, applying the techniques of statistical chemistry to plot asteroid movements through the solar system. Meanwhile, NASA has more ideas for using the Interplanetary Superhighway—including as a low-cost orbit for a space station between Earth and the moon. The math behind the Genesis trajectory is described in last month's *Notices of the American Mathematical Society*. "It may open new doors to people who study planetary mechanics," says Shane Ross, a dynamicist at the University of Southern California in Los Angeles. "And what we do may help chemists solve their problems as well."

Tube Route

Engineers compute spacecraft trajectories; quantum chemists track electron paths. Lately, both camps have found they're working on the same problems.

The recent 3-year Genesis mission, led by Martin Lo of the Jet Propulsion Laboratory (JPL) in Pasadena, California, and Kathleen Howell of Purdue University in Lafayette, Indiana, challenged engineers to find the best path for the spacecraft to leave Earth, sample the solar wind, and return. Genesis, with little fuel, had to navigate a gravitational obstacle course created by Earth, the moon, and the sun. Scientists devised an innovative route that took advantage of tubular, energy-efficient pathways, dubbed the "Interplanetary Superhighway" by Lo, that run throughout the solar system.

Charles Jaffe, a chemist at West Virginia University, Morgantown, noticed that Genesis's route bore an uncanny resemblance to the paths of ionized Rydberg electrons, which also follow tubular, low-energy pathways around protons. Inspired

Monkey Struggle In Wisconsin

A court case centering on the meaning of "consideration" may determine whether the University of Wisconsin, Madison, can prevent the construction of an animal-rights exhibit in the midst of its primate research facilities.

Last year, Rick Bogle, head of the Primate Freedom Project, negotiated an option to buy a small plot located next door to the Wisconsin National Primate Research Center. His project wants to use the land for an exhibit hall "illuminating the inhumane practice of using primates" in research. Owner Roger Charly agreed to sell for \$675,000, further agreeing that the "consideration" for the option was "adequate" even though no money changed hands.

Last summer, the university got wind of the deal and offered Charly \$1 million. Charly told the activists he would rescind their option unless they offered some tangible consideration. Last month, after learning that Charly had accepted the university's offer, the activists sued for breach of contract and on 26 October asked Dane County Circuit Court for a temporary injunction against the sale.

The activists' lawyer, Kendall Harrison of LaFollette, Godfrey, and Kahn in Madison, says, "The contract says consideration was

sufficient." Charly's lawyer, Jon Manzo, says the option is void because "simply acknowledging consideration doesn't make it exist. My guy was receiving no benefit." Alan R. Fish, associate vice chancellor of the university, says it has paid Charly \$1000 for the option and that it plans to use the land to expand its primate facility.

The Nonattachment Hormone

In 95% of mammalian species, males never bond with mates or help raise young. So what makes men inclined to roost and nurture? Testosterone seems to play a role.

Although high levels are associated with aggressive behavior in animals, they plummet with parenting in some species. Studies in North American males suggest the same trend in humans.



Low-T dad?

Now comes evidence from China that this holds true regardless of culture. A team led by Peter Gray, a biological anthropologist at the University of Nevada, Las Vegas, recruited 66 bachelors, 30 married men without children, and 30 married fathers



Record-Setter No More

After 5 years of being the world's largest free-floating object, the 115-kilometer-long B-15A iceberg, tracked by the European Space Agency's Envisat satellite, broke up late last month off Antarctica's Cape Adare.

aged 21 to 38 in Beijing who twice a day provided saliva for testing. Compared with bachelors, childless husbands had about 20% lower levels of the hormone in the morning (when levels are highest), and married fathers had almost 50% lower levels. Smaller but significant differences showed up in afternoon measurements, the team reported last week in *Proceedings of the Royal Society: B*.

Psychologist Nick Neave of Northumbria University in Newcastle-upon-Tyne says the findings make sense because testosterone is related to "a host of sexual behaviors intended to attract a mate [but which] are not conducive to marital bliss and especially not when very young children are present." He adds: "It would be interesting to see if testosterone levels are associated with poorer male parenting skills."