produce proteins and grow, it's hard to understand how it could survive if the amino acid is destroyed in the placenta.

Munn and Mellor concede that more work will be required to show that loss of tryptophan, and not some currently unsuspected consequence of IDO action, is behind the embryo's ability to ward off an immune attack. They say they intend to pursue this issue in further mouse studies. And the investigators also want to see if possible defects in IDO production or action in the placenta might be linked to the repeated miscarriages experienced by some women.

In addition, immunologists will want to explore hints that IDO might have a broader role in immune regulation. The Georgia team has evidence in lab animals that the enzyme also suppresses the activity of T cells that might otherwise attack the body's own tissues. If so, then the researchers may have tapped into a new arena from which to look at the immune system's checks and balances, especially in patients with autoimmune illnesses. "We have come up with a natural immunosuppressive mechanism that is linked to an evolutionarily ancient mechanism: nutrient depletion," Mellor says. "And placental mammals have adapted it in a dramatic way to protect their fetuses."

–TRISHA GURA

Trisha Gura is a science writer in Cleveland, Ohio.

PLANETARY SCIENCE

Neptune's Hasty Moon Poses Celestial Puzzle

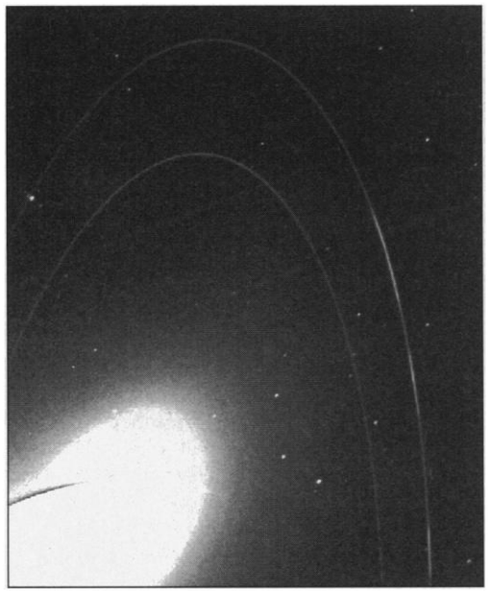
Ever since Newton, astronomers have been calculating the orbits of planets and moons and getting them exactly right. But last week, a team of observers reported that Galatea, a small satellite of the planet Neptune, is a few minutes ahead of schedule. To explain this puzzling haste, astronomers are blaming everything from the gravitational tug of Neptune's mysterious Adams ring to the pull of other, undiscovered moons to an error in the original orbital predictions.

A team led by Claude Roddier of the Institute for Astronomy of the University of Hawaii, Honolulu, learned that the 160-kilometer moon was straying from its orbital timetable on 6 July, when they tracked it down with the 3.6-meter Canada-France-Hawaii Telescope on Mauna Kea. The observations—the first in the 9 years since Galatea was discovered by the Voyager 2 spacecraft—showed that Galatea was 5±1 degrees ahead of its predicted position, or 8.6 minutes ahead of schedule. The difference, they said in an 11 August circular of the International Astronomical Union, is "possibly due to [Galatea's] interaction with Neptune's Adams ring."

The Adams ring, lying a mere 1000 kilometers outside Galatea's orbit, has a strange, arclike appearance, indicating that its dust particles aren't spread evenly around its full circumference. Galatea's gravity is presumably sweeping the particles into clumps, as Carolyn Porco of the Lunar and Planetary Laboratory of the University of Arizona, Tucson, showed in 1991 (*Science*, 30 August 1991, p. 995). But for the ring to pull back strongly enough to affect the satellite's orbit, Porco says, it "would have to have substantial mass." She speculates "that there are bigger bodies within [the arcs], which are the source of the dust that we actually see."

Brian Marsden of the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts, isn't so sure that there's a deviation to explain. For Galatea's orbit to accumulate five degrees of drift in 9 years, its half-day period would have to differ from its predicted value by a mere 0.07 second. "My own inclination is that the prediction is off simply because the observations used for it were only [a limited number of images] from Voyager," he says. Porco disagrees. "There were lots of observations of Galatea by Voyager," she says. "I doubt they are in error."

If the prediction isn't at fault, Marsden says, the gravitational effects of other satellites, or of Neptune's own oblate shape, could have skewed Galatea's orbit, as could a perturbation from a small unknown satellite in nearly the same orbit as Galatea. "Perhaps," agrees Porco, "[but] it would have to be small enough to have escaped detection by the Voyager cameras," which, she says, could spot a 6-kilometer object.



NASA

Orbital mystery. Do bright arcs on Neptune's Adams ring hold clues to Galatea's quickness?

She notes, however, that there's a problem even if the Adams ring is to blame. An interaction between satellite and ring could speed up Galatea, but only if the objects and particles in the ring are colliding with one another "because otherwise the gravitational interaction is not 'shared,' so to speak, among all the bodies in the ring." But, Porco adds, "if there are colliding particles, then the arcs wouldn't stick around very long. The net result: a faster Galatea leaves us with a big puzzle, and I wonder if [the new observation] will stand the test of time."

–GOVERT SCHILLING

Govert Schilling is an astronomy writer in Utrecht, the Netherlands.

SCIENCE IN SOCIETY

Institute Copes With Genetic Hot Potato

A premature warning about the potential dangers of transgenic potatoes sparked a global media frenzy last week and appears to have ended the career of a food safety expert at the Rowett Research Institute in Aberdeen, Scotland. In a press statement, the institute said it regretted "the release of misleading information about issues of such importance."

The incident is the latest high-profile setback for agricultural biotechnology, which in Europe is still struggling to gain consumer acceptance (*Science*, 7 August, p. 768). Indeed, activists have torn up dozens of trial plots in Europe over the last year, and in a June interview with the *Daily Telegraph*, Prince Charles declared that tinkering with genes for food production "takes mankind into realms that belong to God and God alone."

That was the backdrop for the 10 August British TV show "World in Action," on which Rowett researcher Arpad Pusztai announced findings on rats fed potatoes containing the gene for concanavalin A, or Con A, a compound found in jack beans. Con A is a member of the lectins, a huge family of insecticides that occur naturally in plants. Biotech companies have spliced lectin genes into various crops, to try to get them to resist insect pests. Pusztai warned, however, that rats in his experiments suffered from stunted growth and suppressed immune function. He said more safety research was needed, adding: "If you gave me the choice now, I wouldn't eat it."

Even before the show aired, the institute was flooded with calls from journalists who had received a press release touting Pusztai's comments. In most of the ensuing coverage, reporters failed to distinguish between genetic engineering and the specific use of lectins, making it appear that Pusztai warned against eating anything transgenic.