States, the Caribbean, and even as far as South America, said John Rappole of the Smithsonian Institution's Conservation and Research Center in Front Royal, Virginia.

Health officials and researchers spent a lot of time at the meeting drawing up disease-prevention recommendations to be issued later this year. Participants concluded that mosquitoes and birds should be tested widely and that eastern U.S. states should be on the lookout for dead crows. Many also supported a more sophisticated way to track the virus: keeping flocks of chickens and testing their blood regularly. Two decades ago, most states kept such "sentinel flocks" to monitor impending outbreaks of SLE and several other types of mosquito-borne encephalitis. But most of them have disappeared in budget cutbacks, along with the expertise needed to maintain the flocks. It would be difficult to reinstate them on short notice. "The state infrastructures have crumbled to all-time lows," says Yale University medical entomologist Durland Fish. And even if flocks could be restored, they might not be welcome where they're most needed. As one participant noted, it would be hard to install a hen house on Wall Street.

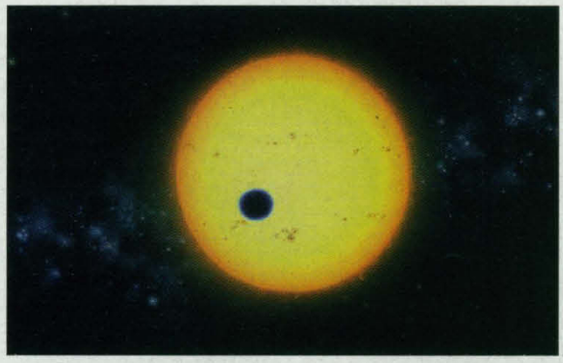
Looking back on the summer crisis, participants agreed that—at a minimum—communication between New York City and other government health agencies needs to be improved. "Perhaps that's the benefit of this outbreak," says virologist Harvey Artsob of the Canadian Science Centre for Human and Animal Health in Winnipeg. "It's tragic for the patients, but it is a reminder that we have to be prepared." **–MARTIN ENSERINK**

ASTRONOMY

Shadow of an Exoplanet Detected

Few doubted that they were out there, but astronomers are delighted to have confirmation: For the first time, a planet in another star system has been seen to cross the face of its parent star. The transit, as it is called, is the most direct glimpse yet of an extrasolar planet. It has also allowed astronomers to pin down the object's mass, size, and density—characteristics that could only be guessed before—which leave little room for doubt that it really is a planet.

"This is what we've been waiting for," says exoplanet hunter Geoffrey Marcy of the University of California, Berkeley. But with just one transit observed, some astronomers think it's too soon to rejoice. "It's an exciting observation," says David Black, director of the Lunar and Planetary Institute in Houston. "But I'd like to see a couple of full transits before drawing any conclusions."



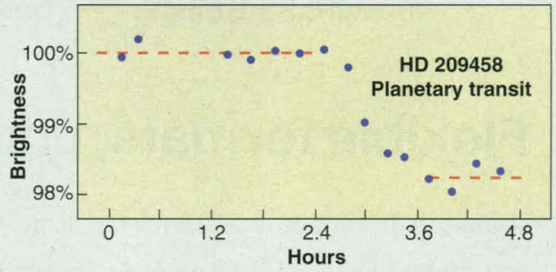
Dark passage. An artist's conception shows the planet crossing the face of its star; a light curve shows the resulting 1.7% brightness drop.

The new planet, closely orbiting a dim star in Pegasus, turns out to be less massive than Jupiter but larger, bloated by the heat of its parent star. According to Greg Henry of Tennessee State University in Nashville, who announced the discovery last week in an electronic circular of the International Astronomical Union, the low density suggests that it and the many other massive exoplanets orbiting close to their parent stars—so-called hot Jupiters—are gaseous. They must have formed farther out in gas-rich regions of a young solar system, then migrated inward.

Over the past 4 years, several teams, most notably Marcy's, have discovered more than two dozen exoplanets orbiting sunlike stars without actually seeing a single one. The astronomers inferred their existence from slight, periodic movements of the parent stars back and forth along the line of sight, presumably because of the tug of an orbiting planet. From the extent and timing of the wobbles, the size, shape, and period of the planet's orbit can be deduced, as well as a lower limit on its mass. The actual mass can't be pinned down as long as the inclination of the orbit is unknown.

On 5 November, Marcy, Paul Butler of the Carnegie Institution of Washington, D.C., and Steve Vogt of the University of California, Santa Cruz, reported that they had detected a new set of telltale wobbles. The team, which regularly uses the 10-meter Keck telescopes on Mauna Kea, Hawaii, to scrutinize likely sunlike stars, announced six new planets, with orbital periods ranging from 3.5 days to almost 3 years.

As always, Marcy passed the new data on to Henry, who uses small, automated telescopes at Fairborn Observatory in the Patagonia Mountains in Arizona to study sunlike stars for slight brightness variations that could be due to pulsations or star spots. He also looks for planetary transits. For a transit to occur, the planet's orbit must be seen more or less edge-on. Just by chance, about 10% of the hot Jupiters should produce transits, but no one had seen one. "I was becoming very worried," says Marcy.



Henry realized that one planet in the latest batch would be an especially good target for his transit search because its orbital period was just 3.5 days. "When I saw Marcy's data for the star HD 209458," he says, "I realized that a transit might occur in the night of November 7" if the orientation of the planet's orbit was favorable. "I quickly reprogrammed one of the automated telescopes before I went home and got to bed." The next day, when Henry looked at the brightness measurements recorded by the 0.8-meter Fairborn telescope, he hardly believed what he saw. Exactly at the predicted moment, the star showed a brightness drop of 1.7%.

"It took me a few more days to exclude the possibility that the brightness drop could be the result of star spot activity," he says. "But in the next 3 or 4 days, the star remained absolutely constant. Then I knew we had it." Black isn't so sure. "Henry only saw the beginning of the presumed transit," he says—the star had set before its brightness increased again. The announcement, Black

CREDITS: (LEFT TO RIGHT) LYNETTE COOK; SOURCE: GREGORY W. HENRY/TENNESSEE STATE UNIVERSITY

says, "is a little premature."

But if Henry is right about the transit, the planet's orbit must be edge-on. Combining that orbital inclination with the wobbles in its parent star, the team could calculate its exact mass: 0.63 Jupiter masses, or 200 Earth masses. From the observed brightness drop, they estimate the diameter of the planet at 225,000 kilometers—60% larger than Jupiter. That puts the bloated planet's density at 0.21 grams per cubic centimeter, far less than that of water. "It has to be gaseous," says Marcy.

According to Marcy and Henry, the discovery puts to rest the nagging possibility that stellar wobbles aren't due to planets at all, but to rhythmic pulsations of the entire star or some other intrinsic cause. But with so much hanging on a single observation, Henry would like to dispel any doubts by repeating it. A second transit should have occurred on 11 November, but it took place during daylight in the United States and could not be observed. The third was predicted for last Sunday night, 14 November. Henry, Marcy, Butler, and Vogt had announced their discovery on 12 November, so that other astronomers could watch for the dimming. But both the Fairborn Observatory and Lick Observatory in California, where another team tried to observe the event, were clouded out that night.

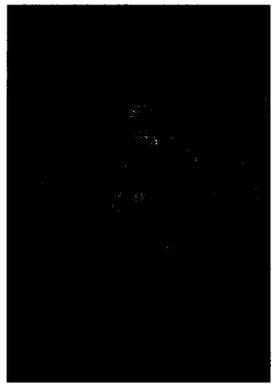
Because upcoming transits will happen when the star is below the horizon of Fairborn observatory, confirmation will have to come from other teams. Marcy says he isn't worried. "We already believe it," he says. "The first brightness dip happened exactly at the predicted moment. If this was due to something else, Mother Nature would have played a horrible trick upon us." –GOVERT SCHILLING

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

NIH

Protests Win Changes to Peer-Review Proposal

Sometimes, it pays to fight City Hall. Biomedical researchers who protested that their fields were slighted in a proposed reorganization of the National Institutes of Health's (NIH's) peer-review system are winning at least some concessions. Responding to the complaints, NIH's Panel on Scientific Boundaries for Review last week penciled in changes to its blueprint that will give heightened prominence to AIDS, urological, and development research. It also made clear that further fine-tuning is likely before it issues its final "Phase 1" report on the overall structure of the peer-review system in January.



CREDIT: (LEFT TO RIGHT) UCSF; BILL INGALLS/NASA

Misunderstood? Yamamoto clarifies peer-review plan.

The panel, headed by National Academy of Sciences president Bruce Alberts, originally proposed organizing the more than 100 study sections run by NIH's Center for Scientific Review (CSR) under 21 supercommittees known as integrated review groups (IRGs). Sixteen of these were to be centered on disease or organ systems and five on basic research whose relevance to specific diseases cannot yet be predicted. But in more than 800 e-mail and conventional comments on the draft proposal, many scientists argued that their fields were overlooked or downgraded. AIDS and urological researchers mounted what appeared to be organized letter-writing campaigns (*Science*, 5 November, p. 1074). So, at its 8 to 9 November meeting, the panel:

• Proposed creation of three additional IRGs—AIDS and AIDS-Related Research, Renal and Urological Sciences, and Biology of Development and Aging—bringing to 24, rather than 21, the number of IRGs in its proposed peer-review structure;

• Made clear that it is leaving intact—at least for the time being—the four new IRGs that were created in 1998 and earlier this year for neuroscience and behavioral research, completing the merger of the National Institute of Mental Health, the National Institute on Drug Abuse, and the National Institute on Alcohol Abuse and Alcoholism into NIH; and

• Promised a series of conference calls with experts in other fields to "further refine" its proposed IRG structure.

According to CSR director Ellie Ehrenfeld and molecular biologist Keith Yamamoto of the University of California, San Francisco, chair of the CSR Advisory Committee, the first targets of those phone calls will be leaders in fields whose practitioners felt scorned by the panel's initial draft. These areas include toxicology, nutrition, pediatrics, gerontology, dental and craniofacial sciences, radiation oncology, and surgical research.

On some issues, the panel simply has to explain itself better. For example, says Yamamoto, some chemists worry that the panel wants to force basic chemistry research into a physiology mode, whereas "our actual goal was to ensure a venue at NIH for fundamental chemistry." In addition, "some basic scientists are reading the draft report and saying, 'Oh, they're just going to make everything disease-based,' " Yamamoto says. "And some clinician-scientists are saying that the basic scientists are going to take over the whole review system."

ScienceScope

Warning Shot NASA space science chief Ed Weiler (below) is losing patience with Gravity Probe B, the $400 million spacecraft that would test Einstein's theory of general relativity by measuring the space-time curvature caused by Earth. Mission planners say they need an extra 11 months and $30 million to fix problems with the probe, which was supposed to launch next October.

Weiler is ordering a technical review of the program, in the works for more than 2 decades, to determine what it will take to get the probe into orbit. "We've already spent hundreds of millions on this, and I don't want to spend hundreds of millions more," he says. If the review—due to be finished by the end of the year—concludes that $30 million is sufficient to get the program back on track, Weiler says he will find the money. If that is not enough, he says, he may discuss terminating the program at a senior NASA managers meeting in February.

Killing Gravity Probe B—the brainchild of Stanford University scientists—would pose political dangers for NASA, however, given the strong support for the program from California's congressional delegation. But Weiler waves off that threat. "My job is to do the right thing for American taxpayers; someone else can worry about the politics."

Sharing the Weather Wealth India and the United States have moved to fill a meteorological monitoring gap that has handicapped weather forecasters and climate scientists. Researchers from both nations gathered this week in New Delhi to inaugurate a data-sharing center that will immediately transmit information gathered only by Indian satellites to users worldwide. In the works for 16 years, the data-sharing agreement "is a dream come true," says James Dodge of NASA's earth sciences program.

India has historically denied prompt international access to its weather data, including Indian Ocean cloud-cover images and temperature records, saying that potential enemies might use it to better target missiles or time attacks (*Science*, 17 October 1997, p. 379). But now, in exchange for electronic access to massive U.S. climate databases and other information, India will give researchers abroad a real-time look at its holdings.

Indian forecasters say that the center, which will also conduct forecasting research, will help them spot potentially dangerous storms earlier. U.S. researchers, meanwhile, say closing "the India gap" will lead to better global climate models.