RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Debut Into the Big Time

In what is billed as its "first real test," the 10-meter Keck Telescope in Hawaii, the world's largest optical telescope, in late March picked up the most detailed image yet of the most distant known galaxy. Labeled 4C41.17, the galaxy is 12 billion light-years away and is a powerful beacon of radio waves. The infrared image was made from an exposure of about a half-hour. The elongated shape at the center coincides with the main body of the galaxy; the four bright objects are relatively nearby stars that happen to be in the field of view.

AAA Pressures Hawaii on Guide Dogs

Big annual meetings bring in big bucks to the cities that host them, and more scientific societies that hold such meetings are using that leverage to press for their own agendas. The American Psychological Association boycotted New Orleans because of Louisiana's anti-abortion law and, more recently, several groups withdrew from Colorado as a meeting site because of the state's failure to pass gay rights legislation.

Now the American Anthropological Association (AAA) is asking its members to resolve that the AAA will hold no more meetings in Hawaii until the state changes its dog quarantine law. The state has established a 120-day quarantine for all entering animals as a precaution against rabies. The AAA says this discriminates against blind, deaf, and "mobility impaired" scholars who need dogs to help them get around. Since vaccines are available to prevent rabies, the AAA asserts, the state should allow immediate entry for people accompanied by "certified vaccinated assistance dogs." Until then, America's island paradise may have to forget about being blessed by incoming hordes of anthropologists.

Waterman Award Winner

This year's Waterman Award, the National Science Foundation's (NSF) prestigious and lucrative award for young investigators, is going to biologist Deborah L. Penry, 36, assistant professor in the department of integrative biology at the University of California, Berkeley.

Selected over 70 other nominees, Penry will be getting $500,000 over 3 years for her research in biological oceanography. Penry is a paragon of interdisciplinarity—she uses chemical engineering theory to study the cycling of organic matter by looking at digestive processes in marine invertebrates. "I model animal guts as chemical reactors," she says. By studying digestion—the main way organic matter is cycled in the oceans—her research contributes to the understanding of the global carbon cycle, says the NSF.

More Numbers on Clinton R&D Initiatives

FCCSET 'CROSSCUTS'			
Interagency S&T Initiatives	**1993 Request**	**1994 Request**	**Percent Change**
	($ millions)		
Biotechnology Research	4030	4298	6.6
Global Change Research	1372	1476	7.5
Science, Math, Eng., and Tech. Education	2092	2334	11.5
Advanced Materials and Processing	1821	2061	13.1
High-Performance Computing and Communications	803	1000	24.0
Information Infrastructure Tech. and App.	—	96	N/A
Advanced Manufacturing Technology	—	1385	N/A

Looking for further evidence that President Bill Clinton has a soft spot for technology? Try the White House report released last week on the six government-wide science and technology initiatives in Clinton's 1994 budget request. In all but one case, Clinton is asking for larger increases than President Bush did last year.

According to the analysis by the Office of Science and Technology Policy (OSTP), the biggest increase will go to computers and to a new subcomponent that includes computer networks ("information infrastructure"). Combined, the two would get nearly $300 million more than in the 1993 request, an increase that reflects the backing of Vice President Al Gore, who has made such "data superhighways" his pet project. Clinton is also adding a new manufacturing initiative to the five Federal Coordinating Council on Science, Engineering, and Technology "crosscuts." Most of this is an amalgamation of programs already under way, and OSTP officials can't say how much of it would be new money, but the independent Council on Competitiveness estimates it's a more than tenfold increase.

Surprisingly, Gore's other great passion, programs to control global warming, do relatively poorly with only a 7.5% raise. Considering that Bush, who was attacked for his tepid reaction to global warming fears, requested a 24% increase in this area for the 1993 budget, this suggests that Gore's presence in the White House may not lead to the sort of green government many environmentalists had hoped for.

Lawsuit Over Revelle's Greenhouse Views

An ugly dispute over the late Roger Revelle's co-authorship of an article minimizing the global warming threat may be going to court. Revelle, a pioneering climatologist and the former director of the Scripps Institution of Oceanography, was listed as a co-author of a 1991 paper in the journal *Cosmos*. The paper suggested there was too much uncertainty over global warming to justify drastic reductions in greenhouse gas emissions. Revelle died shortly after the article was published. But former colleague Justin Lancaster, a research fellow at the Harvard School of Public Health, has since alleged in letters to the CRC Press, which wanted to reprint the *Cosmos* article, that the article does not reflect Revelle's views. He also claims that its first author, atmospheric scientist S. Fred Singer, pressured Revelle into lending his name to the piece.

Now Singer, who heads the Washington-based Science and Environmental Policy Project, is firing back. On 16 April, he filed a libel suit with the backing of the Washington, D.C.-based Center for Individual Rights, a conservative nonprofit law firm. Singer asserts that he has a manuscript with notes on it in Revelle's handwriting, which, he claims, proves Revelle contributed to the article.

The case, not yet scheduled for trial, may hinge on Revelle's mental state the year before he died in June 1991. Singer wrote most of the article, but listed Revelle as a co-author—with Revelle's permission—because it incorporated aspects of a speech Revelle had given at the 1990 AAAS meeting. Lancaster contends, though, that at the time Revelle reviewed the article the 81-year-old scien-

tist was weak and ill after triple-bypass heart surgery. He points out that Revelle made his notes on the manuscript after Singer arrived unannounced at his office and spent more than 4 hours talking about it with him. "If it took 4 hours to get [Revelle's] agreement, he didn't agree," Lancaster says.

NIH Kills Genes and Crime Grant

After a year of battling the University of Maryland over a proposed conference on the links between genetics and crime, the National Institutes of Health (NIH) last week issued the coup de grâce: It terminated "for cause" a $78,000 grant that was originally to pay for the 1992 conference.

In an 22 April letter to Maryland, NIH accused the university of having "significantly misrepresented the objectives of the conference in its brochure "by [giving] the distinct impression that there is a genetic basis for criminal behavior." In doing so, NIH claimed, Maryland "caused great concern and dismay among senior NIH officials, the scientific community, and the public at large, particularly the African-American community...." The grant, from the Ethical, Legal, and Social Implications program of NIH's National Center for Human Genome Research, was to bring together scientists, bioethicists, and social scientists to discuss the evidence for, and implications of, genetic predispositions towards crime. This, NIH and Maryland quickly discovered, is a touchy topic. The Congressional Black Caucus, among other mostly African American critics, argued it was racist to suggest the existence of links between genes and crime. NIH responded to the furor by freezing the grant last July, forcing the organizers to cancel the conference (*Science*, 7 August 1992, p. 739). Now, after getting nowhere in a year of negotiations with the university for some sort of alternative conference, NIH hopes to end the whole affair.

But the agency may not get its wish. In a statement released last week, Maryland said it would appeal the action. It particularly took issue with NIH's assertion that "...adverse publicity made it impossible for the proposed conference or any conference on a similar topic to produce meaningful results." Such an "assumption of the public's inability to effectively address controversial issues strikes at the very heart of intellectual inquiry," Maryland responded, adding that NIH's action "does violence to academic freedom."

CARL C. HANSEN

In the treetops. Crane with gondola yields unimpeded, repeatable access to area 110 meters in diameter.

A Crane With a View

Scientists from all over the world are lining up for a ride in a gondola—one suspended from a huge crane, part of what the Smithsonian Tropical Research Institute (STRI) in Panama says is the best method yet for studying the rain forest canopy. The canopy is a new frontier of sorts: Because of the difficulty of gaining access to treetops, scientists have had a difficult time making species inventories, looking at allocation of resources such as carbon and water, as well as other projects. They've tried any number of ways to get into the canopy. The French, for instance, have been using a hot air balloon to drop a fabric mesh raft anchored by air-filled pontoons. Other researchers, using climbing gear, have attempted to rappel up the giant trees. But the Smithsonian's crane—the brainchild of STRI researcher Alan P. Smith—with its 55-meter radius, enables scientists to study a far greater area of forest canopy than has been heretofore possible. Now, says plant physiologist Stephen Mulkey of the University of Missouri, St. Louis, "everybody is clamoring for a spot on the crane."

Mulkey himself, one of the first researchers to use the crane, says the system enables scientists to get data from a wide area on, for example, how CO_2 is stratified in the atmosphere from the ground to 40 meters up. In addition, he says, nobody had been able to get a close look at how water moves from trees' roots to the stomata (microscopic openings) in leaves until the crane came along. "What we could find with this system could revolutionize the topic of water transport and water relations in these huge overstory tropical trees," he says.

The crane is operating in a park outside of Panama City. STRI wants to erect two more on its main tropical field station, Barro Colorado island in the middle of the Panama Canal.

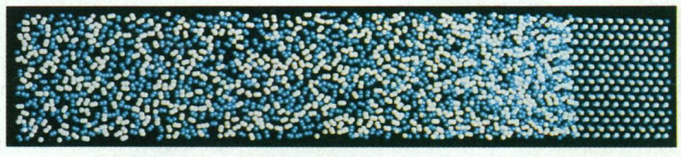
Explosive Anatomy

Explosions have had a walloping role in the last half-millennium or so of the human drama. But just what happens during an explosion? When things are disintegrating so rapidly, experimenters have a difficult time probing the chemical slam dance in atomic detail.

Computer simulations could be an answer, say theorists at the Naval Research Laboratory (NRL) in Washington, D.C. An NRL team led by Carter White has devised a generic atomic-scale computer simulation of detonations, which, they argue, reflects the real thing closely enough to serve as a tool for uncovering the finest details of detonations. And that, they say, could lead to safer explosives—ones that don't blow up if they fall off a truck—as well as more devastating ones that give more bang for the buck.

The NRL team devised a generic explosive crystal made of about 10,000 two-atom molecules—restricted to two dimensions to keep the computational task practical. The model includes mathematical terms that depict the proximity and orientation required for the two-atom molecules to react and the amount of energy released when they do. The simulation begins when a projectile smacks into one side of the crystal causing the simulated molecules to move (at speeds as high as about 6 miles per second) from rigid crystalline positions to new, reactive positions. Then, as in real detonations, all hell breaks loose.

The "in computero" results, White says, are consistent both with what experimentalists have learned about real detonations and with classical theories of two-dimensional detonations. Says theoretical physicist Brad L. Holian of Los Alamos National Laboratory in New Mexico, who is familiar with the work: "The calculations produce the first realistic [simulated] chemical reactions of the detonation variety." Next up: the use of parallel computers to do simulations that involve 1 million atoms.



NRL

Kapow! Detonation wave speeds rightward in computer-simulated crystal.