

have agreed to support the posts even if the foundation does not extend funding beyond the first three years. "We are very excited about the opportunities this grant gives us to serve as a bridge between international policy and technology studies and research," says Long. Other institutions will use their grants to support existing positions or create postdoc slots in security policy.

"For physicists and biologists working on science and security issues, this program represents a once-in-a-generation opportunity to get a faculty po-

sition," says von Hippel. "To my knowledge, there has been no new faculty appointment in this area in the country since the end of the cold war."

"We've learned the hard way that such apparently innocuous things as airliners, the US mail, electric power, and the computer systems can be turned into weapons against us," says Granger Morgan, head of Carnegie Mellon's department of engineering and public policy. "As a result, our grant will help us to identify ways to design safer systems."

Paul Guinnessy

Europe's Comet Mission Delayed

Minutes after it took off on 11 December from Kourou, French Guiana, the Ariane 5 rocket plunged into the Atlantic Ocean with two telecommunications satellites on board. The mishap means the European Space Agency's ambitious comet probe, Rosetta, will be delayed—and must find a new target.

Rosetta was supposed to set off on 22 January for a 2011 rendezvous with Comet Wirtanen. It would have used a smaller version of the Ariane 5 rocket than the one that failed. But Arianespace, the launch company, suspended all sendoffs for several weeks to conduct an internal review. As a result, Rosetta missed its launch window for Wirtanen.

In any case, ESA wants to wait until it has confidence in a successful launch before slinging the €1 billion (roughly \$1.1 billion) Rosetta into space. Out of 14 launches, the Ariane 5 has had four failures—including its maiden flight on 4 June 1996, which lost ESA Cluster, a mission to study Earth-Sun interactions. (A replacement mission was sent into

space in 2000.) "The reason for not flying now," says ESA's director of space science, David Southwood, "is a distrust in the Ariane 5 system, not [in] any one single item. This made the decision hard and extremely controversial. . . . We have done this to ensure that [a launch failure] does not happen again and that Europe gets a truly reliable and extremely modern launcher in Ariane 5."

Like Wirtanen, the replacement comet should be one that Rosetta can chase in from the cold. "What we particularly want," says the mission's plasma consortium spokesman, Chris Carr of Imperial College, London, "is a long view—from close to its farthest point, where it's almost dormant, to full activity." Adds project scientist Gerhard Schwehm, "We will look for a comet that comes into the inner Solar System. There are a few phenomena that really come into play when the comet is heated up—the coma and tail start evolving." And, for Rosetta'slander to touch down softly, the comet can't exceed about 5 km in diameter.

Other selection criteria are minimizing technical risks from changes in

the spacecraft's trajectory and keeping costs down. Storage and other added costs are expected to come to €50–100 million, straining ESA's already tight budget (see PHYSICS TODAY, August 2002, page 24).

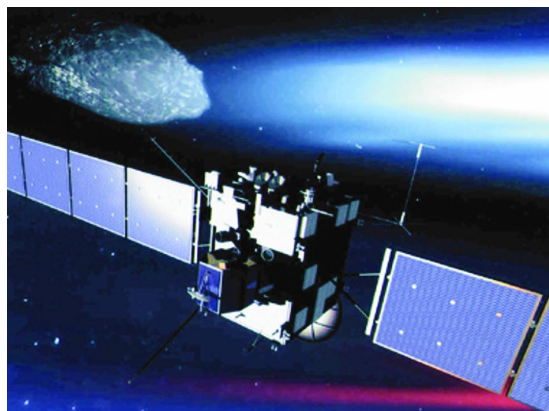
Candidate replacement destinations for Rosetta include the comets Churyumov-Gerasimenko, Haneda Campos, Howell, Hardy-2, and Tempel-2. A decision is expected in May, and the new launch date will be sometime in the next one to two and a half years, Schwehm says.

The Rosetta delay is the second setback in recent months for the comet community: Last August, NASA lost the Comet Nucleus Tour (Contour), which was supposed to fly by three comets (see PHYSICS TODAY, October 2002, page 26). SMART 1, a lunar probe that will test solar propulsion, and other ESA missions may also face delays.

In other European space news, Alain Bensoussan, president of CNES, France's space agency, announced on 29 January that he will step down after seven years on the job. Of ESA's 15 member states, says Southwood, France has the largest space industry. "The head of CNES is always important to ESA, and any change is likely to herald other changes. I think that all Europeans interested in developing European space capabilities have to be concerned."

CNES's budget has been shrinking since 1997, and a recent report chaired by Roger-Maurice Bonnet, until recently a top CNES official, gave Bensoussan a vote of no-confidence. Just a few months earlier, Gérard Brachet, CNES's director general, left. "There's a general crisis at CNES," says an agency spokesman, adding that the Ariane 5 failure, while part of the crisis, did not trigger Bensoussan's resignation.

Toni Feder



Rosetta (above) seeks a new date after the failure of the ill-fated Ariane 5 (right). (Artist's rendering of Rosetta courtesy of ESA.)



ESA/CNES/ARIANESPACE/CSG

ITER Leader to Head CERN

Given the good impression Robert Aymar made last year as chair of an external review committee for CERN, it's no surprise he's been named director general of the European particle physics lab. His five-year term officially begins in January 2004, but throughout this year, he says, he'll split his time between CERN and the International Thermonuclear Experimental Reactor (ITER), which he currently heads.

Aymar's committee made a series of recommendations aimed at getting

the Large Hadron Collider back on track after the proton-proton collider's cost was reported to have ballooned by about 30%, to 3.5 billion Swiss francs (\$2.6 billion). The recommendations focus on getting the LHC built by 2007—two years late—and paid for by 2010. Most other research activities at the lab are suspended. Before the budget squeeze in 1996, says Aymar, “CERN hadn't suffered from



Aymar

decreases in manpower and support. It was a surprise to them that those cost cuts were real.” At CERN, he adds, “the culture of science is very good. The culture of cost is not. Changing culture takes

time. I will apply the recipe I provided.” (See PHYSICS TODAY, August 2002, page 26.)

Five years ago, Aymar was passed over for CERN's top job in part because he is not a particle physicist. This time, however, the plasma physicist got unanimous backing from CERN's governing council. Among staff members, the mood is one of cautious optimism. There seems to be an expectation, says Ghislain Roy, an accelerator physicist and an elected member of the CERN staff council, “that, not being tainted by the local culture, [Aymar] will bring a fresh approach, and he will dare to implement change.” CERN's problems go beyond money, to management, adds Roy, noting that the Aymar report called for broad changes in the management structure. “Will he deliver?”

“What matters at this stage in CERN's history,” says Luciano Maiani, the lab's sitting director general, “is that Dr. Aymar has sound scientific judgment and excellent project management skills.” Maiani, who plans to return to teaching and research in theoretical physics at the University of Rome (“La Sapienza”), adds, “the main issue in the coming years will be to not allow scope and program extensions to creep into [the construction of the LHC].” One key to Aymar's tenure, observers say, is who he names as scientific director.

Aymar's record in managing large science projects is impressive. From 1977 to 1988, he oversaw the design, construction, and startup of the Tore Supra, a superconducting tokamak at Cadarache in southern France. His

LHC connections date back to the early 1990s, when, as head of the sciences of matter directorate in France's Atomic Energy Agency (CEA), he chaired a committee that assessed the accelerator's cost and science. In 1994, he took up the mantle of the \$5 billion ITER (see the story on page 23 of this issue).

Besides seeing the LHC through to completion and operation, as director general Aymar will be involved in planning life after the LHC. Among the things that need sorting out are what the next accelerator project will be and whether European countries will join directly or via CERN. Says Aymar, “I'll be looking at ways to keep the cost of the LHC to its present estimate and, at the same time, asking, What is the future?”

Also at the meeting at which Aymar was voted in, CERN's council introduced an associate membership option, and India was granted observer status.

Toni Feder

Chaudhari to Head Brookhaven

Praveen Chaudhari, a longtime scientist and manager at IBM, has been named as the new director of Brookhaven National Laboratory. He takes over the position vacated in 2001 when John Marburger was appointed by President Bush to head the Office of Science and Technology Policy. Physicist Peter Paul, who has served as the interim director, will continue at the lab in his longtime position as deputy director for science and technology when Chaudhari begins work 1 April.

“I guess the first few months will be a very, very steep learning curve,” Chaudhari said. “I'm preparing for that, but I'm not unfamiliar with Brookhaven. I've known it over many years and even have done an experiment there.”

Chaudhari, a condensed matter physicist, spent 36 years at IBM's T. J. Watson Research Center in Yorktown Heights, New York. In addition to working as a staff scientist at IBM, he has served as the vice president of science and as director of physical science. He has published more than 160 research articles and has 22 patents.

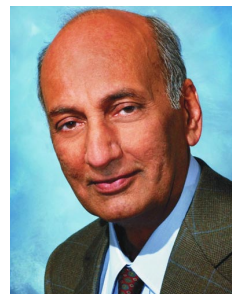
“What I hope to do when I get there,” he said, “is learn about all of the science they're doing, all of the issues they've faced, they are facing, and may face in the future. That includes not just science, but science funding

and all of the things we worry about when trying to manage science.” While the lab is well-known for its 3.8-kilometer-circumference Relativistic Heavy Ion Collider (RHIC), Chaudhari noted that it is much more than that. “There is the light source, and now there is going to be a nanoscience center. Then there is medical imaging, and activities in the environment, and in security.”

Chaudhari said the transition from active researcher back into management will be the most difficult part of the new job. “I left management about 10 years ago because I didn't want to manage anymore,” he said. “I wanted to do hands-on science. I've done that for the last 10 years. But now the time has come when I felt I'm ready for a change.”

The decision to take the Brookhaven job was arrived at “by three defining factors,” he said. “One was myself, and I was ready. The second was, What shape was Brookhaven in?” Chaudhari spoke first with Marburger, then former director Nick Samios, who stepped down in 1997, and interim director Paul. They, plus other lab officials, assured him the lab was in good shape, so he turned his attention to the Department of Energy, which is the “landlord” for all of the national labs. Discussions more than a year ago with DOE Secretary Spencer Abraham and other department officials left him convinced the department supported science research. “And then when Ray Orbach got the job [as director of DOE's Office of Science], I said, ‘Oh, I knew Ray when we were both struggling scientists and I know he's for science, and his managers are for science, so DOE seems in the right mood from a management perspective.’”

Jim Dawson



Chaudhari

Canberra Fire Destroys Observatory

The Australian National University's Mt. Stromlo Observatory, near Canberra, Australia burned nearly to the ground on 18 January. The bush fires, which ravaged more than 1050 km² of land, destroyed the observatory's three domes, six telescopes, equipment workshops, eight staff houses, and an administration building. Preliminary estimates put