

the losses at more than AUD\$20 million (roughly US\$12 million) and are climbing.

The workshops held a nearly finished AUD\$5 million imaging spectrograph for the Gemini North Telescope in Hawaii and initial work on a similar instrument for the Gemini South Telescope in Chile. Those losses may be hardest to deal with, says Brad Gibson of Swinburne University of Technology located in Victoria.

Penny Sackett, director of the observatory, adds, "Our losses felt overwhelming at the time, and the scene of Mt. Stromlo is one of devastation . . . , but we retained our most valuable asset, our staff, 100% intact, and we are extremely grateful for their safety." Luckily, most of the 60 staff members and 20 students were away for the weekend; those who were there had less than 30 minutes to abandon the site before it was engulfed in flames.

Most of the observatory data survived, as did the designs for the Gemini instruments, states Sackett. Some observational programs, such as one to search for Kuiper Belt objects, will have to be abandoned, says Brian Schmidt, a Mt. Stromlo astronomer. "But we have not yet fully searched the 2.5 terabytes of data we have already taken, so it will not be a complete loss." A multimillion-dollar plan to digitally image the southern sky will also have to be postponed "until we are able to build a replacement of the 50-inch telescope," he adds.

The disaster prompted an outpouring of local, national, and international support, including an offer from the American Astronomical Society to help restock the Mt. Stromlo library. In mid-February, staff members returned to work and are living in temporary buildings until new facilities are constructed. The rebuilding began immediately and will take three years to complete. "The hardest part to replace will be the history," says Schmidt. "The Australian national capital's oldest building—the Oddie telescope—and others contained some of the best architectural examples of 1920s Australia."

It's likely that not all of Mt. Stromlo's capabilities will be rebuilt at the same location. Light pollution from Canberra has caused viewing conditions to deteriorate at the observatory, and some replacement telescopes may be built at Siding Spring Observatory, located 600 km to the north. In either case, says Sackett,

MATTHEW COLLESS, ANU



The remains of one of the domes and the 50-inch telescope at Mt. Stromlo.

"the new Stromlo emerging from the ashes will be stronger and more resilient than that before the fires."

Paul Guinnessy

Two Radio Telescopes Get New Directors

The Square Kilometer Array and Arecibo Observatory have tapped new directors. On 1 January, Richard Schilizzi took the reins as inaugural director of the SKA. The post is based in Dwingeloo at the Netherlands Foundation for Research in Astronomy (ASTRON), where he previously headed the Joint Institute for Very Long Baseline Interferometry in Europe (JIVE). And on 5 May, Robert L. Brown, who has been at the National Radio Astronomy Observatory for more than three decades, most recently as deputy director, will take the helm of Arecibo's parent organization, the Cornell University-run National Astronomy and Ionosphere Center. He will succeed Paul Goldsmith, who stepped down in December after 10 years in the post.

The SKA's large collecting area will make it 100 times more powerful than the best radio telescopes of today. "Everyone is excited about the SKA," says Schilizzi. "Its sensitivity to hydrogen, the most abundant element, gives it a unique role in exploring the dark ages of the early universe, before and during the first appearance of galaxies." The many areas of research foreseen for the SKA include star and galaxy formation, large-scale structure of the universe, evolution of heavy elements, dark matter, gravitational waves, gamma-ray bursts, and the search for extraterrestrial intelligence.

Scientists in more than a dozen countries are working on the SKA, with seven sites and a half dozen designs under consideration (see

PHYSICS TODAY, October 2000, page 70). The antenna elements range in size from a few centimeters to hundreds of meters, but no design fully covers the desired 150 MHz–20 GHz frequency band, says Schilizzi, "so we may choose to make it a hybrid." The design is supposed to be selected by 2007, with construction projected to start in 2010, and first light hoped for in 2015. The SKA comes with a price tag of \$1000 per square meter, or \$1 billion.

Meanwhile, topping Brown's list is the introduction of remote access to encourage more use of Arecibo, the world's largest single-dish telescope. He also

plans to add a multibeam receiver for studies of atomic hydrogen in galaxies and to boost Arecibo's upper frequency from 10 to 15 GHz by fine tuning the panels that make up the 305-meter dish. The higher frequencies would increase the angular resolution, aid in very long baseline interferometry experiments, and open the window to astrochemically important molecules such as formaldehyde, which can be used to estimate cloud temperature, and methanol, a signpost of star formation.

Arecibo is also a testbed for radio interference issues, data processing, and science for both the SKA and the Low Frequency Array—a collaboration of the Naval Research Laboratory, MIT's Haystack Observatory, and ASTRON.

Toni Feder



Brown



Schilizzi

News Notes

Stanford Lures Blandford, Kahn.

Stanford University's plans to start an interdisciplinary institute for particle physics, astrophysics, and cosmology are back on terra firma, thanks to a \$7.5 million gift from Fred Kavli, physicist and founder of Kavlico Corp, a major supplier of sensors to the automotive and aeronautics industries. The directorship of the Kavli Institute for Particle Astrophysics and Cosmology will be endowed by Pehong and Adele Chen, whose original gift of \$15 million to found the institute took a beating in the recent high-tech stock bust (see