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ASTRONOMY & SOCIETY

National Science Foundation Won't Rebuild Arecibo

WHEN THE NATIONAL SCIENCE FOUNDATION (NSF) announced a new educational center at Arecibo Observatory in Puerto Rico, one line of an otherwise innocuous statement sent shock waves through the community: "The solicitation does not include rebuilding the 305-meter telescope or operational support for current scientific infrastructure, such as the 12-meter radio telescope or Lidar facility."

The NSF has been the steward of Arecibo Observatory since its construction was completed in 1963. But when a suspended receiver collapsed on the iconic 305-meter dish at the observatory's heart in 2020 (*S&T:* Mar. 2021, p. 8), it became clear that any replacement would be years in the making. The contract for the University of Central Florida (UCF) to manage Arecibo Observatory was already set to expire in March 2023, and the NSF announcement put the writing on the wall.

"We're entering a transition phase to ramp down scientific and technical activities and hand over to the future STEM education center managers," says Julie Brisset, who directs the Florida Space Institute at UCF.

What the new education center would look like is still unclear; NSF is still soliciting proposals as of press time. The center would supplement significant education and outreach programs already happening at the observatory.

Despite the lack of support for existing science facilities, it's still up in the air whether the observatory would continue operations in some form. "I'm pretty sure they would not disregard the opportunity to have science going on — they're just not going to fund it," Brisset says.

In fact, the NSF announcement states, "Teams seeking to utilize existing scientific infrastructure or proposing for new projects can submit proposals that are complementary to the scope of the new center." An NSF spokesperson confirmed that such proposals would be coordinated with the Foundation as well as with the new managers of the reimagined center.

But the instruments are fragile. "If there's, say, one month or so when an instrument is not used and maintained, then usually it doesn't work when you show up again," Brisset notes.

The NSF announcement came as a surprise to many in the community. "I was not expecting the NSF announcement," says Tracy Becker (Southwest Research Institute), who got her start via the Research Experience for Undergraduates program at Arecibo. "Like many other scientists, I have always remained optimistic that the gravitas of the iconic telescope, plus the incredible and diverse scientific research being conducting there, and could be conducted there in the future with a modest investment, would be enough to warrant rebuilding the telescope."

There also remains the question of how to replace Arecibo's lost radar capabilities, which scientists had used for detailed characterization of near-Earth asteroids. It's possible that additional investments in existing facilities can recover some capabilities. NSF is also exploring next-generation radar needs, with a report expected later in 2023.

Perhaps the biggest impact will be on the local community. "To me, there is irony in creating a STEM education center in Puerto Rico through the closure one of the largest facilities on the island that actually employs people with STEM careers," Becker says. "The engineers and scientists who operate the Arecibo Observatory instruments will need to look for different jobs, and many will likely be driven to leave the island of Puerto Rico."

Brisset agrees. "This is a big loss for the Puerto Rican community," she says. "I mean, it's great to have a STEM education center there, but a STEM education center always benefits from active science."

■ MONICA YOUNG

▲ *Left:* Arecibo Observatory as it appeared during its heyday. *Right:* This photo shows the damage to the 305-meter telescope at Arecibo Observatory shortly after its collapse.

BEFORE COLLAPSE: NAIC ARECIBO OBSERVATORY / NSF; AFTER COLLAPSE: MICHELLE NEGRON / NSF