Published on *Ciencia Puerto Rico* (https://www.cienciapr.org)

Mexicans leery of giant U.S. telescope [1]

Enviado el 22 febrero 2006 - 2:07pm

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Calificación:

From CNN site, Tuesday, February 21, 2006 SIERRA NEGRA, Mexico (AP) -- In the biggest joint Mexico-U.S. scientific venture ever, builders are finishing a monster telescope on top of a volcano that will let astronomers look back 13 billion years and uncover secrets about the creation of the universe. President Vicente Fox and Mexico's scientific community have championed the telescope, the largest of its kind in the world, saying it shows how a developing country can play a major role in cutting-edge technology. Yet the fact that most of the U.S. funding comes from the Defense Department has worried some Mexicans who are leery of any military connections with their powerful northern neighbor. "We want Mexico to be in the vanguard of scientific advance, but it would be better if all the money came from non-military sources," said Rosa Maria Aviles, a federal lawmaker on the lower house of Congress' Science and Technology Committee. "We are a pacifist nation." U.S. and Mexican scientists say the Pentagon often funds scientific projects so it can use the technology, but the actual telescope will have no direct military use. With a 165-foot antenna and a total cost of nearly $120 million, the project dwarfs any scientific endeavor that Mexico has been involved in before. The gleaming white structure, which looks like a gigantic satellite dish, springs out of volcanic rocks on the freezing-cold summit of the 15,000-foot-high Sierra Negra. Located in the central state of Puebla, Sierra Negra is one of six Mexican volcanos that are higher than any peaks in the continental United States. Working above cloud level, the telescope will pick up millimeter-long radio waves that have been traveling through space for nearly 13 billion years. Astronomers will use the information to plot more detailed maps than ever of stars and galaxies as they existed shortly after the Big Bang. "We will get incredible new insight into how galaxies were first formed," said project scientist David Hughes of Mexico's National Astrophysics Optics and Electronics Institute. "Once we start operating, we should be making breakthrough discoveries on an almost daily basis." Scientists also will be able to collect new data

on nearer galaxies such as Andromeda and examine all its stars and planets to see what may lurk there. The telescope will be ready for test use in May and will be fully operational by the end of next year, said construction director Emanuel Mendez. So far, the United States has invested $38 million in the project, $31 million of which came from the Defense Advanced Research Projects Agency, or DARPA, the Pentagon's central research and development organization. The U.S. Senate Armed Services Committee first allocated the agency's funds for the telescope in 1995 when the project was in its infancy. In a report that year, the committee wrote that the "design could greatly improve the capability" to find and recognize targets in space. Translated: Since the telescope is essentially a giant antenna with sensors to pick up radio waves, the military could use knowledge learned in constructing the instrument to build antennas for its own uses, said Peter Schloerb, the U.S. project scientist for the telescope. "The military may want to use antennas for space surveillance," said Schloerb, who is from the University of Massachusetts. "It is a way to figure out what everybody is doing up there." While the telescope is designed to pick up radio waves that have traveled vast distances through space, the technology also could be used to build antennas that pick up the same waves much closer to home, said John Pike, director of military information web site globalsecurity.org. "Millimeter-wave sensor technology has the potential to locate camouflaged objects on the ground or help guide missiles," Pike said. Silvia Torres, an astronomer at Mexico's National Autonomous University, said she has no problem with U.S. Defense Department investments in scientific research south of the border as long as it is not for specific military projects. "There has always been an interaction between the scientific and military communities," Torres said. "It is important to get investment here. We have a lot of talented young scientists and a good geography for instruments like telescopes." Defense Department investments have helped create a range of civilian-use innovations such as the Internet. The grumbling by lawmakers about the Pentagon involvement in the project has not led to broader protest actions or demonstrations against the telescope in Mexico. But it has been a real challenge for the Mexican and U.S. builders who are constructing the monster telescope at 15,000 feet. Because of the altitude, all workers are regularly tested to see if they have enough oxygen in their blood and are rushed down the mountain if their level is found to be dropping too fast. The team had to haul a whopping 13,000 tons of concrete up the dirt road that winds around the extinct volcano. Hundreds of local villagers were hired to bring up the materials in their compact cars, an effort to employ local residents in one of the poorest areas of the country. At the beginning, vehicles could not reach the summit and villagers used mules to bring up the concrete, said Mendez, the construction director. "Mules are fantastic at navigating mountains," Mendez said. "They are the best road engineers in the world."

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