

Amid protest, Hawaii astronomers lose observation time

August 11 2019, by Audrey Mcavoy



In this July 14, 2019, file photo, a telescope at the summit of Mauna Kea, Hawaii's tallest mountain is viewed. Astronomers across 11 observatories on Hawaii's tallest mountain have cancelled more than 2,000 hours of telescope viewing over the past four weeks because a protest blocked a road to the summit. Astronomers said Friday, Aug. 9, 2019, they will attempt to resume observations but in some cases won't be able to make up the missed research. (AP Photo/Caleb Jones, File)

Asteroids, including those that might slam into Earth. Clouds of gas and dust on the verge of forming stars. Planets orbiting stars other than our own.

This is some of the research astronomers say they missed out on as a protest blocked the road to Hawaii's tallest mountain, one of the world's premier sites for studying the skies.

Astronomers said Friday they will attempt to resume observations, but they have already lost four weeks of viewing—and in some cases, they won't be able to make up the missed research. Protesters, meanwhile, say they should not be blamed for the shutdown.

Astronomers across 11 observatories on Mauna Kea cancelled more than 2,000 hours of telescope viewing, work they estimate would have led to the publication of about 450 papers in peer-reviewed scientific journals.

"Any one of them could have been spectacular, could have been Nobel Prize-winning science. We just now will never know," said Jessica Dempsey, deputy director of the East Asian Observatory, which operates one of Mauna Kea's telescopes.

Stormy weather, earthquake damage and maintenance issues have interrupted observations before, but this is the longest all of the observatories on the dormant Big Island volcano have been shut down since its first telescope opened a half-century ago.



In this July 19, 2019, file photo, protesters continue their opposition vigil against the construction of the Thirty Meter Telescope at Mauna Kea on the Big Island of Hawaii. Astronomers across 11 observatories on Hawaii's tallest mountain have cancelled more than 2,000 hours of telescope viewing over the past four weeks because a protest blocked a road to the summit. Astronomers said Friday, Aug. 9, they will attempt to resume observations but in some cases won't be able to make up the missed research. (Bruce Asato/Honolulu Star-Advertiser via AP, File)

The observatories' large telescopes are owned and operated by universities and consortiums of universities including the University of California and California Institute of Technology.

The national governments of Canada, France, Japan and others also fund and operate telescopes on their own or as part of a group. Astronomers around the world submit proposals to institutions they are members of to compete for valuable time on the telescopes.

Mauna Kea's dry air, clear skies and limited light pollution provide some of the world's best nighttime viewing, and its number of advanced telescopes makes it an unparalleled place for astronomy in the Northern Hemisphere.

"Some of the best observational astronomy being done today, some of the best and most critical scientific research, is being done on Mauna Kea," said Rick Fienberg, press officer for the American Astronomical Society.

In 2011, three astronomers won the Nobel Prize in physics for work that relied on data gathered using Mauna Kea's W.M. Keck Observatory. Their analysis of exploding stars, or supernovas, showed the expansion of the universe is accelerating.



This Jan. 6, 2009, file photo shows astronomy observatories atop Mauna Kea, a dormant volcano on Hawaii's Big Island where some Native Hawaiians have been peacefully protesting the construction of what would be one of the world's largest telescopes. Astronomers across 11 observatories on Hawaii's tallest mountain have cancelled more than 2,000 hours of telescope viewing over the past four weeks because the protest blocked a road to the summit. Astronomers said Friday, Aug. 9, 2019, they will attempt to resume observations but in some cases won't be able to make up the missed research. (AP Photo/Tim Wright, File)

Earlier this year, the East Asian Observatory was part of a global team that captured the first image of a black hole, a breakthrough that stirred talk of another Nobel.

Native Hawaiian protesters began blocking the road July 15 to stop the construction of yet another telescope, which they fear will further harm a summit they consider sacred. Hundreds of people have gathered daily to protest the Thirty Meter Telescope, which is being built by U.S. universities, along with Canada, China, India and Japan. The telescope would be Mauna Kea's biggest yet, capable of seeing back 13 billion years.

Astronomers say the roadblock has denied them regular, guaranteed access to their facilities, which puts their staff and equipment at risk. They suspended observing on the protest's second day.

The telescopes need to be accessible 24 hours a day to resume regular observations, so staff can respond to things like changes in the weather, said Doug Simons, executive director of the Canada-France-Hawaii Telescope, which is owned by the University of Hawaii and the national research institutes of Canada and France.

"You can imagine the rain coming down on a multimillion-dollar telescope," Simons said.



In this July 23, 2019, file photo, Hawaii governor David Ige, right, watches a kahiko hula performance during a visit to the ninth day of protests against the Thirty Meter Telescope at the base of Mauna Kea on Hawaii Island. Astronomers across 11 observatories on Hawaii's tallest mountain have cancelled more than 2,000 hours of telescope viewing over the past four weeks because a protest blocked a road to the summit. (Jamm Aquino/Honolulu Star-Advertiser via AP, File)

On Friday, the observatories said they would attempt to restart

operations by providing protesters a list of vehicles going up the mountain and when they will be going.

Protester Kealoha Pisciotta, who was part of a yearslong legal fight against the Thirty Meter Telescope, said it wasn't right to blame demonstrators when the observatories themselves decided to stop viewing.

"They chose to close down for fear of protesters who are unarmed and nonviolent," Pisciotta said.

She noted law enforcement was allowing only one vehicle of Native Hawaiians to go to the summit for prayer each day, yet the U.S. and state constitutions guarantee their rights to religious and customary practices.

The state in mid-July blocked all cultural practitioners from going up the mountain when it closed the road to clear the way for construction vehicles, but it began allowing one car up in the weeks after.



In this July 21, 2019, file photo provided by the Hawaii Department of Land and Natural Resources, protesters block a road to the summit of Mauna Kea in Hawaii. Astronomers across 11 observatories on Hawaii's tallest mountain have cancelled more than 2,000 hours of telescope viewing over the past four weeks because a protest blocked a road to the summit. Astronomers said Friday, Aug. 9, they will attempt to resume observations but in some cases won't be able to make up the missed research. (Dan Dennison/Hawaii Department of Land and Natural Resources via AP, File)

Among the more dramatic research affected is a program to identify asteroids and other "near-Earth objects" like comets. In the worst-case scenario, the objects could be "killer asteroids" on a trajectory to wipe out cities while crashing into our planet, said Canada-France-Hawaii's Simons.

Canada-France-Hawaii has a longstanding program to spot such objects with the help of two telescopes atop Maui's Haleakala volcano. The Maui telescopes, called PAN-Starrs, scan vast areas of the sky each night. They send coordinates for items of interest to the Canada-France-Hawaii Telescope, which zooms in to determine their orbits and whether they might pose problems.

This was the method used in 2017 when astronomers using Canada-France-Hawaii did some of the initial work identifying the orbit of Oumuamua, the first object from interstellar space ever documented to have entered our solar system. The oblong visitor turned out to be a comet from a distant star.

PAN-Starrs has continued to scan the sky and has spotted one near-Earth object nearly every night of the observatory shutdown, Simons said.

Astronomers using Keck missed an opportunity to study a Jupiter-sized planet orbiting a star outside our solar system July 24. Keck was to have studied the extrasolar planet at the same time as the Hubble Space Telescope and a telescope on board the International Space Station.



In this Aug. 31, 2015, file photo, from bottom left, the Caltech Submillimeter Observatory, the James Clerk Maxwell Telescope and the Submillimeter Array, far right, are shown on Hawaii's Mauna Kea near Hilo, Hawaii. Astronomers across 11 observatories on Hawaii's tallest mountain have cancelled more than 2,000 hours of telescope viewing over the past four weeks because a protest blocked a road to the summit. Mauna Kea is one of the world's premier sites for studying the skies. (AP Photo/Caleb Jones, File)

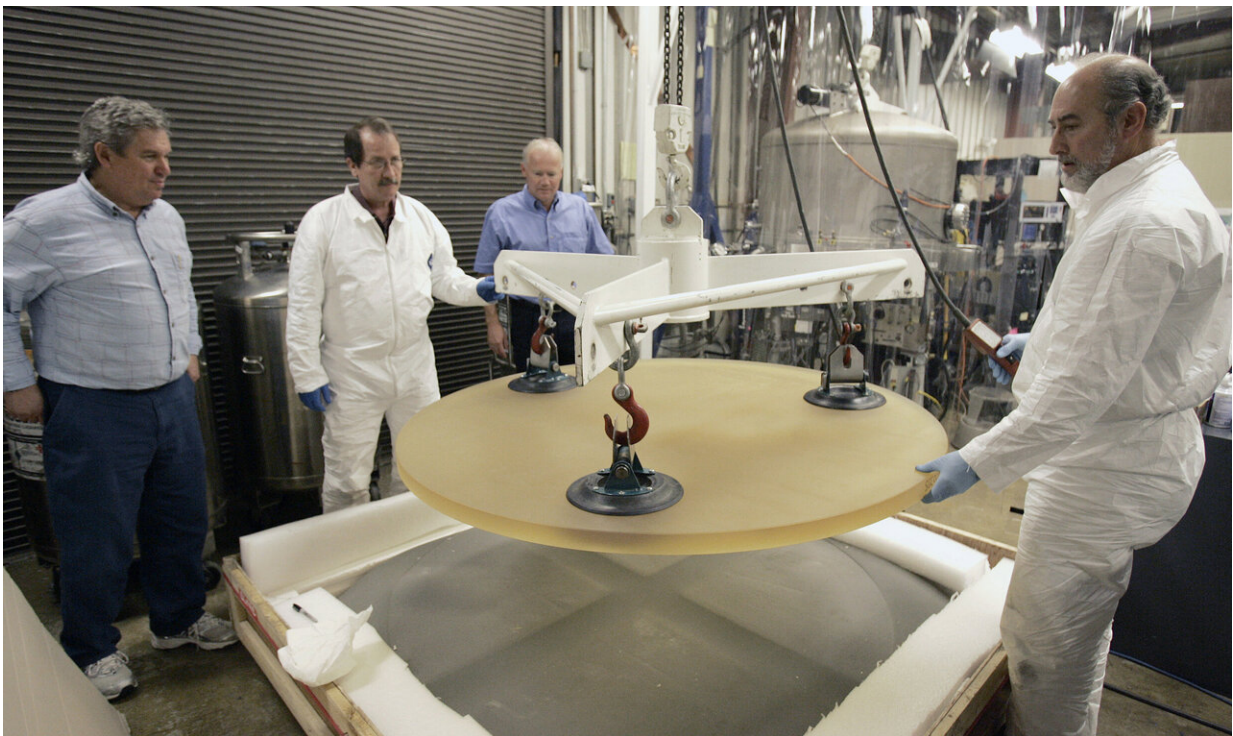
The absence of Keck's data will leave the project incomplete, said John O'Meara, Keck's chief scientist. That's because each telescope was to have observed in a different wavelength: Keck in near infrared, the space station telescope in X-ray, and Hubble in ultraviolet. The various wavelengths combined provide a better understanding of the exoplanet.

Every night of Keck observations turns into knowledge humanity didn't have before, O'Meara said.

"I can guarantee you that some science that would be in a textbook 10 years from now did not get done," he said.

The James Clerk Maxwell Telescope was scheduled to study clouds of gas and dust that form stars as part of a project going back eight years. Astronomers measure the dust and clouds at precise intervals to determine how they are changing.

Missing observations will affect astronomers' understanding of how baby stars form, said Dempsey, whose East Asian Observatory operates the Maxwell telescope.



In this Jan. 7, 2008, file photo, Thirty Meter Telescope Project Scientist Jerry

Nelson, left, and Telescope Optics Group Leader Eric Williams, third from left, inspect a 500 pound glass blank as it is removed from packing by Dave Hilyard, Chief Optician at University of California, right, and Brian Dupraw at the UC Observatory Optical Lab at the University of California at Santa Cruz, Calif. Astronomers across 11 observatories on Hawaii's tallest mountain Mauna Kea have cancelled more than 2,000 hours of telescope viewing over the past four weeks because a protest blocked a road to the summit. Astronomers said Friday, Aug. 9, 2019, they will attempt to resume observations but in some cases won't be able to make up the missed research. (AP Photo/Ben Margot, File)

Meanwhile, workers have been unable to do critical repairs at the Subaru Telescope, run by the National Astronomical Observatory of Japan. Gaps between its dome and main shutter need to be closed to keep water from seeping in, said Michitoshi Yoshida, the [telescope](#)'s director.

Subaru arranged for a contractor to make the fixes during a window between July 22 and Sept. 8, but workers have been unable to access the site due to the protester's roadblock. The contractor said it could finish the job if it's able to start by Monday, but otherwise will have to reschedule the work for next year, Yoshida said.

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