World's largest telescope to be built in Hawaii

by AUDREY McAVOY

HONOLULU (AP) — Hawaii was chosen Tuesday as the site for the world's biggest telescope, a device so powerful that it will allow scientists to see some 13 billion light years away and get a glimpse into the early years of the universe.

The telescope's mirror — stretching almost 100 feet in diameter, or nearly the length of a Boeing 737's wingspan — will be so large that it should be able to gather light that will have spent 13 billion years traveling to earth. This means astronomers looking into the telescope will be able to see images of the first stars and galaxies forming — some 400 million years after the Big Bang.

"It will sort of give us the history of the universe," Thirty Meter Telescope Observatory Corp. spokesman Charles Blue said.

The telescope, expected to be completed by 2018, will be located atop a dormant volcano that is popular with astronomers because its summit sits well above the clouds at 13,796 feet, offering a clear view of the sky above for 300 days a year.

Hawaii's isolated position in the middle of the Pacific Ocean also means the area is relatively free of air pollution. Few cities on the Big Island mean there aren't a lot of man-made lights around to disrupt observations.

The other finalist candidate site for the Thirty Meter Telescope was Chile's Cerro Armazones mountain.

Richard Ellis, astronomy professor the California Institute of Technology and a Thirty Meter Telescope board member, told reporters in a conference call that Mauna Kea is at a higher elevation, its air is drier and its average temperature fluctuates less during the course of the day — all helpful factors for those using the new telescope.

The telescope will be built by the University of California, the California Institute of Technology and the Association of Canadian Universities for Research in Astronomy.

The current world's largest telescopes also are located atop Mauna Kea, but the size of their diameters are about three times smaller than the Thirty Meter Telescope. Current telescopes also don't routinely offer views of hundreds of planets orbiting around other stars and stars that are near the sun like the new telescope will.

But it may not hold the world's largest title for long.

A partnership of European countries plans to build the European Extremely Large Telescope, which would have an 138-foot mirror. The group is considering sites in Argentina, Chile, Morocco and Spain. It plans to decide on a location next year and be able to host its first observation in 2018.

Another group of universities plans to finish the Giant Magellan Telescope, also around 2018, with an 80-foot mirror in Las Campanas, Chile.

Rolf Kudritzki, the director of Institute for Astronomy at the University of Hawaii, said Hawaii's northern hemisphere location will help the Thirty Meter Telescope complement other large telescopes planned for Chile in the southern hemisphere.

"I think all of the astronomers in the world can be happy because in principle now the two largest telescopes will be able to cover the whole sky. And for research that's an important decision," he said.

It will also be a special boon to Hawaii astronomers, who will be allotted a share of the TMT's observation time. Kudritzki said his colleagues held an impromptu celebratory party Tuesday.

But the decision invited protests from some Native Hawaiian and environmental groups.

Native Hawaiian tradition holds that high altitudes are sacred and are a gateway to heaven. In the past, only high chiefs and priests were allowed at Mauna Kea's summit. The mountain is home to one confirmed burial site and perhaps four more, and environmentalists oppose the telescope on the grounds it would hurt some endangered species.

"This the kind of legacy they want to leave? They just keep building on our mountain," said Kealoha Pisciotta, president of Mauna Kea Anaina Hou, a group with family and religious ties to the mountain.

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