World's largest space observatory opens in Chile (Update)

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Radio telescope antennas of the ALMA (Atacama Large Millimeter/submillimeter Array) project are seen in San Pedro de Atacama , Atacama desert, some 1500 km north of Santiago, on March 13, 2013. The ALMA, an international partnership project of Europe, North America and East Asia with the cooperation of Chile, is presently the largest astronomical project in the world.

What is thought to be the world's largest ground-based observatory opened Wednesday in northern Chile, wielding unprecedented power to peer into the remotest regions of the universe.

The ALMA space observatory was inaugurated here on a desert plateau some 5,000 meters (16,400 feet) above sea level, at a ceremony attended by President Sebastian Pinera and other dignitaries.

"Here in this desert, the driest in the world, it is a great privilege to inaugurate the observatory," Pinera said.

Calling it "the world's most powerful," he said the observatory will make "a significant contribution to humanity, enable a better understanding of the universe in which we live, and perhaps help us discover life beyond Earth."

"ALMA is a huge telescope 16 kilometers (10 miles) in diameter," said the facility's director Thijs de Graauw, as it was declared officially opened.

Amid excited applause, 59 of the 66 antennas slowly began to rotate and point toward the interior of the universe. By October, all the antennas will be fully installed and operational.

Alma Director Thijs De Graauw speaks during the inauguration of a Radio telescope antenna of the ALMA (Atacama Large Millimeter/submillimeter Array) project in the San Pedro de Atacama , Atacama desert, some 1500 km north of Santiago, on March 13, 2013.

Gianni Marconi, an astronomer at the massive ground array of telescopes, recently proudly proclaimed to AFP that ALMA is "the largest observatory that has ever been built."

ALMA—short for the Atacama Large Millimeter-submillimeter Array, an acronym which means "soul" in Spanish—is a joint effort among North American, European and Asian agencies.

The observatory is located near Pedro de Atacama, a desert town popular with tourists.

With almost no humidity or vegetation to block its view of the heavens,

ALMA's antennas range in diameter from seven meters (23 feet) to 12 meters (39 feet.)

"There is virtually no water vapor, there is just so little that whatever light is emitted from a heavenly body, galaxy or star, it gets here with no interference" Marconi said.

When scientists who homed in on this site for ALMA said they were looking for a place that had a high altitude, low humidity, sunny weather and fairly easy logistical access.

De Graauw told AFP recently that ALMA's ultra-precise equipment would be used to seek answers to big questions—star formation, the birth of planets and how the system was created after the Big Bang.

Unlike optical or infrared telescopes, ALMA can capture the faint glow and gas present in the formation of the first stars, galaxies and planets in an extremely cold region of the universe.

"It is a revolution in the history of the universe in the realm of millimetric and sub-millimetric waves, which can look through clouds of dust and focus on the formation of stars themselves," De Graauw added.

"Telescopes cannot see what is happening inside these clouds. With ALMA, we can. And that is like opening a new window."