

# General Dynamics Wins Contract To Build Antennas For ALMA Telescope

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General Dynamics C4 Systems, a business unit of General Dynamics, has been awarded a \$169 million contract by Associated Universities (AUI) to design, manufacture and deliver 25, 12-meter antennas for the North American portion of the Atacama Large Millimeter Array (ALMA) project, an international astronomy facility.

ALMA's primary goal is to provide a radio telescope array that will allow scientists to observe and image galaxies out to the edge of the universe, and stars and planets in their formative stages with unprecedented clarity.

An international collaborative effort to build and operate the world's most sensitive millimeter and sub-millimeter wavelength telescope, ALMA ultimately could consist of an array of up to 64 antennas, and an additional compact array supplied by Japan, all in Chile's Atacama Desert, 16,500 feet above sea level.

The sky above the site has the clarity and stability essential for the required level of imaging fidelity. The antennas will work together as one telescope to provide a spatial resolution 10 times higher than the Hubble Space Telescope.

"Imaging qualities and the ability to change the configuration of the antennas will make ALMA astronomy's most versatile imaging instrument," said Gary Kanipe, the General Dynamics C4 Systems vice president responsible for the program.

"General Dynamics has reached an unprecedented level of radio telescope sophistication as evidenced by the decision to award the ALMA contract."

Millimeter and submillimeter-wave astronomy is the study of the universe in the spectral region between what is traditionally considered radio waves and infrared radiation. In this realm, ALMA

will study the structure of the early universe and the evolution of galaxies; gather crucial data on the formation of stars and planets; and provide new insights on our own solar system.

The first antenna is scheduled for delivery in 2007 with final delivery of all the antennas expected by the end of 2011. Pre-assembly work on the contract will be done at General Dynamics C4 Systems' Kilgore, Texas, and Duisburg, Germany, facilities.

Previously, in February 2000, Vertex Antenna Systems was awarded a contract by AUI to build one of two antenna prototypes. This business was acquired by General Dynamics in September 2004.

ALMA construction and operations are led on behalf of North America by the National Radio Astronomy Observatory (NRAO), operated by AUI for the National Science Foundation. ALMA is a partnership between North America (the United States and Canada), Europe, and Japan, in cooperation with the Republic of Chile. The NRAO received funding for ALMA in North America from the U.S. National Science Foundation in cooperation with the National Research Council of Canada.

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