

# The CCAT News

Issue 11 – August 2010

## **National Research Council Report Highly Recommends CCAT**

In an announcement on August 13, 2010, at the National Academies in Washington, D.C., the National Research Council (NRC) highly recommended the Cerro Chajnantor Atacama Telescope (CCAT), a giant submillimeter telescope that will be erected in the Chilean desert in order to help unravel the cosmic origins of stars, planets, and galaxies.

The recommendations were the result of the Astro2010 Decadal Survey, in which the NRC convened a panel of experts to look at the coming decade and prioritize all research activities in astronomy and astrophysics.

CCAT was recommended for an immediate start. CCAT is a collaboration between Cornell University; the California Institute of Technology (Caltech) and the Jet Propulsion Laboratory (JPL), which is managed by Caltech for NASA; the University of Colorado; the Universities of Cologne and of Bonn in Germany; the Universities of British Columbia and of Waterloo in Canada; and Associated Universities, Inc. It will be a 25 m telescope located at an elevation of 5600 m above sea level on a high mountain in Chile. Taking advantage of dramatic recent advances in detector technology, CCAT will employ large cameras and spectrometers to survey the sky at millimeter and submillimeter wavelengths, providing an unprecedented combination of sensitivity and resolution across a very wide field of view.

CCAT will reveal young galaxies, stars, and solar systems enshrouded in thick clouds of dust that make these objects very faint or invisible at other wavelengths. The Astro2010 report stated, “With a broad scientific agenda, CCAT will enable studies of the evolution of galaxies across cosmic time, the formation of clusters of galaxies, the formation of stars in the Milky Way, the formation and the evolution of planets and the nature of objects in the Solar System. [CCAT] would excel as a sensitive survey facility.”

“We’ve hit a home run,” says Riccardo Giovanelli, CCAT director and professor of astronomy at Cornell. “CCAT will be a unique telescope at an exceptional site. I am particularly pleased that Astro2010 recommends a quick start for construction, so that all of us, especially in the U.S. community, will have access to its powerful survey capabilities soon after ALMA is fully operational.”

According to Jonas Zmuidzinas, a CCAT project scientist and professor of physics at Caltech, “We are making rapid progress on all fronts—in detectors, instruments, and new facilities—and this is leading to important scientific discoveries. With CCAT, we will gain real insight into the evolution of stars and galaxies.”

The Committee’s report remarked CCAT will be “an essential complement to ALMA,” the international Atacama Large Millimeter Array now under construction in Chile. ALMA will provide detailed, high resolution images of individual objects over narrow fields of view. This complementarity provides a strong impetus to begin construction of CCAT as soon as possible. Indeed, as Nobel Laureate and CCAT Design Review Committee Chair Robert W. Wilson noted, “CCAT is very timely and cannot wait.”

This sentiment was echoed in the Committee’s report, which said “CCAT is called out to progress promptly to the next step in its development because of its strong science case, its importance to ALMA, and its readiness.” The Committee recommended federal support for one third of the CCAT construction cost as well as support for CCAT operations.