



Andrew Lange: New Chair for Physics, Astronomy, & Mathematics at Caltech Talks About CCAT



Andrew Lange, the Marvin L. Goldberger Professor of Physics, is the new Chair of the Division of Physics, Mathematics, and Astronomy at Caltech, replacing Tom Tombrello. The CCAT News asked Andrew how this change might affect the CCAT Project...

Lange – “I have made CCAT the #1 priority for our division. I think that the submillimeter offers tremendous opportunity for scientific discovery in areas ranging from cosmology and galaxy formation to star and planet formation. The CCAT collaboration is leading the technological revolution in submillimeter detection and application to astronomy, and I believe we should exploit this to make CCAT one of the premier new ground-based telescopes of the coming decade. CCAT combined with ALMA will make an incredibly powerful tool. The upcoming Decadal Review provides a great opportunity for us to make the case for CCAT to our colleagues around the world.”

CCAT and the Decadal Review

A Decadal Review of US Astronomy and Astrophysics is underway. Its findings are scheduled for release in early 2010. CCAT is preparing a white paper for presentation to the relevant Decadal Review committees. In preparation for the Decadal Review, a committee to survey the Future Prospects for US Radio, Millimeter and Submillimeter Astronomy was sponsored by Associated Universities, Inc. and chaired by Richard McCray. CCAT was highly visible in the report of that committee; in its Executive Summary (Goal 2) it states that "[to] ensure that the US reaps the scientific benefit of its investment in ALMA, [...] we must support the development of pathfinder telescopes for ALMA science, especially those outfitted with large format focal plane arrays", a clear reference to CCAT.

Vanguard Composites Wins 2 NASA SBIRs for Development of CCAT Optics



Vanguard Composites of San Diego has been awarded two Small Business Innovative Research grants from NASA to study composite optics applicable to CCAT. The approach to be studied employs Graphite Epoxy front and back surfaces and an Al honeycomb core. This approach promises lightweight, stiff, and low thermal expansion optics provided the work is successful in developing approaches to fabrication to the ~5 micron rms surface tolerances required. The first phase will last 6 months and the awards total \$200k. When completed a Phase 2 proposal could garner an additional \$1M for CCAT optics development. <http://www.vanguardcomposites.com/>

Vertex Antennentechnik Receives €600k Award for CCAT Study Work

A proposal developed by U. Cologne in Germany in collaboration with CCAT and Vertex (General Dynamics) has netted an award of €600k from the German government to study optics for CCAT. The award will be used to address the most critical technical issues in the engineering design of CCAT. One topic will be to develop a conceptual design for a compound primary mirror panel using technology analogous to that used with the ALMA antennas. This approach will be compared to that developed by Vanguard Composites, described elsewhere in this newsletter. This will enable a valid trade between the two competing approaches and substantially reduce the risk in manufacture of CCAT optics. <http://www.vertexant.com/>

CCAT Prepares to Begin Engineering Design Phase Work

The CCAT Partners are in the process of fine tuning the technical work and the management approaches for the upcoming Engineering Design Phase. The major objectives of this Phase are retirement of the majority of technical risk, completion of trades between alternate competing subsystem concepts, a complete Conceptual Design, and an updated and accurate cost estimate. Work will be accomplished by a mix of contracts with subsystem vendors and in-kind analytical studies to be performed at the Partner institutions. This phase of work is planned to last two years. Total funding will range between \$6M and \$10M depending on availability of funds at the Partners.

Rutherford Appleton Laboratory Studies CCAT Control System



Led by Patrick Wallace, developer of the TPOINT telescope pointing software and other packages, a group at Rutherford Appleton Laboratory in the UK is studying alternatives for the CCAT Control System. Funded by STFC, this effort represents a man-year of work to survey existing telescope control systems and recommend a configuration for CCAT. <http://www.tpssoft.demon.co.uk/index.htm>