THE COSMIC MISSION: OVERVIEW, DATA ANALYSIS CENTER, AND ON-GOING STUDIES

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The Constellation Observing System for Meteorology Ionosphere and Climate (COSMIC) is now being built jointly by academic and industry partners in the US and Taiwan. Six COSMIC satellites are planned for launch in late 2005. After initial deployment, the satellites will be distributed over 3 or 6 planes to provide global atmospheric and ionospheric observations with an average delay of less than 3 hours. Each COSMIC satellite will carry three payloads: (1) A GPS occultation receiver with two high-gain limb viewing antennas and two antennas for precision orbit determination (POD); (2) A Tiny Ionospheric Photometer (TIP) for monitoring electron density in the F2 layer along the sub-satellite tracks; and (3) A three-frequency Beacon transmitter for detailed ionospheric tomography and scintillation studies. Work is now underway on designing and building the satellites, the payloads, the GPS antennas, the ground infrastructure, and the near-real time COSMIC analysis center. This presentation will provide an update on the recent progress of the COSMIC project, discuss trade studies that we are conducting to maximize the scientific value of the mission, and present results from the CHAMP, SAC-C, and GPS/MET missions that are currently processed by the COSMIC analysis center.