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--- For Immediate Release ---

Press Release

(Oct 2011) Scientific Solutions, Inc., (SSI) of North Chelmsford, Massachusetts, has been awarded a small satellite contract from the Atmospheric and Geospace Science division of the National Science Foundation (NSF). The EXOCUBE satellite, for studying the uppermost levels of the Earth's atmosphere, is designed as an innovative small satellite about the size of a milk carton, and follows the NSF and Department of Defense's initiative to develop CubeSats science missions. CubeSats are very small (~10 cm cubed), very light (≤ 1 kg) satellites which allow for more efficient, pervasive, and cost-effective research from Earth orbit.

The goal of the EXOCUBE mission is to measure the densities of all significant neutral and ionized atom species in the ionosphere, the outer region of the atmosphere where incoming solar radiation ionizes a large fraction of atoms. Knowledge of the composition of that volatile region of the atmosphere is vital to the modeling and forecasting of Space Weather; the conditions of the upper regions of the atmosphere (above approximately 150 km in altitude) that have a significant effect on satellite communications and spacecraft operation and performance.

"The ability to accurately model and forecast Space Weather has garnered much more practical interest in this age of GPS and satellite communication," said Bob Kerr, co-owner of SSI and Principal Investigator for the project. "Operators of communication satellites, for example, want to know when their operations will be disrupted, and how satellite orbital decay will be affected by changes in atmospheric composition as we approach solar maximum." John Noto, founder, co-owner, and President added, "These will be the first in-situ neutral density data in nearly 30 years and the first to measure the amount of hydrogen at the top of the atmosphere."

The EXOCUBE project will be a collaboration between Scientific Solutions, California Polytechnic State University (Cal Poly), National Aeronautics and Space Administration Goddard Space Flight Center (NASA-GSFC) and the University of Wisconsin - Madison (UW). Cal Poly has been the site of one of the most active CubeSat development programs in the U.S., involving a large number of undergraduate students. Twenty to forty Cal Poly students will work on the EXOCUBE project, designing the satellite bus and operating systems, and integrating the EXOCUBE payload into the standard CubeSat form. NASA Scientist Federico Herrero is providing the primary sensor payload and students at UW will perform initial instrument calibration and testing.

"The significant involvement of students in payload development is one of the great attributes of the CubeSat program," said Noto. "Getting students directly involved in the crafting, development, testing, and launch of a space vehicle gives them hands-on experience at the forefront of space research."

The three-year project begins in October 2011 and will culminate with the production of an instrument ready for space-flight qualification in late 2014. Exocube-Oct 2011.pdf