



Global satellite mission recognized for improving understanding of Earth's water changes

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The Gravity Recovery and Climate Experiment (GRACE) mission operated by the Center for Space Research at The University of Texas at Austin has received the prestigious William T. Pecora Award for outstanding contributions toward understanding the Earth through remote sensing.

Aerospace Engineering Professor Byron Tapley, who directs the center and GRACE, accepted the award Dec. 10 from the U.S. Department of the Interior and NASA "for improving scientific understanding of water changes throughout the world."

The Pecora Award is presented annually to both a group and an individual at the meeting of the American Geophysical Union. The group award was accepted by Tapley and other leaders of the GRACE team, which also includes NASA's Jet Propulsion Laboratory, Germany's space agency and Germany's National Research Center for Geosciences. An individual Pecora Award was also presented to a University of New Mexico professor for his remote sensing research.

GRACE uses twin satellites to make precise measurements of gravity-field changes on Earth. Major breakthroughs from GRACE include establishing the rapid loss of ice mass in recent years from Greenland and Antarctica, and major changes in water storage in China's Yengtze River and other water sources – sometimes as a result of human use.

In addition to preparing GRACE satellite data for use by scientists internationally, the Center for Space Research engineers have improved the sensitivity of GRACE's measuring devices several times since the mission started in 2002. This spring, center staff led by Dr. Srinavas Bettadpur provided researchers with the ability to estimate mass changes with a spatial resolution of less than 200 miles.

This level of precision proved important in 2006 when GRACE data identified Greenland's accelerated ice loss. In a study published in *Science*, Center for Space Research researcher Jianli Chen, Geology Professor Clark Wilson and colleagues revealed that the island's ice loss occurs primarily along its southeastern edge. Adding that ice into the North Atlantic current may lower water and wind temperatures traveling past Ireland's and Great Britain's west coasts, potentially producing chillier winters.

Note: Tapley holds the Clare Cockrell Williams Centennial Chair in Engineering. Wilson is the Wallace Pratt Professor of Geophysics in the John A. and Katherine G. School of Geosciences.

To learn more about the GRACE mission and the Center for Space Research's involvement, go to:
<http://www.engr.utexas.edu/news/articles/190001011178/index.cfm>

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