

Want to understand the fluid dynamics of the oceans and atmosphere? UCLA's got the video

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Filming in the SPIN lab

(PhysOrg.com) -- Oceans and clouds, even the atmosphere itself, are in constant motion and can undergo dramatic fluctuations, like hurricanes, that lead to severe consequences. If you've ever wondered how these enormous systems function, wonder no longer.

Jonathan Aurnou, an associate professor of planetary physics in the



UCLA Department of Earth and Space Sciences, and John Cantwell, a UCLA graduate student in Aurnou's laboratory, have developed a project that clearly demonstrates the large-scale fluid dynamics occurring in the oceans and atmosphere by using simplified lab models.

With funding from the National Science Foundation and UCLA's Office of Instructional Development, they devised a number of innovative experiments and then recorded them to create a <u>30-minute film</u> on these basic fluid motions. The eight-chapter film is believed to be the first comprehensive entry-level video on this topic.

Aurnou also teaches a UCLA course called "Blue Planet: An introduction to Oceanography," which addresses the large-scale <u>fluid</u> <u>dynamics</u> in the oceans and <u>atmosphere</u>.

"My feeling is that students don't always get to see the basic components of the incredible fluid phenomena that are taking place around them," Aurnou said. "We can set up lab experiments that demonstrate the basic physics occurring in atmospheres and oceans. My goal was then to make videos of these experiments so my students, and students everywhere, could gain an intuitive sense for the large-scale fluid systems that we live within."

The cinematography and film editing were performed by Jonathan Schwarz, who earned his master's degree from UCLA's School of Theater, Film and Television (TFT), and Gabriel Noguez, who is working on his master's degree at TFT.

"I was very pleased to find that you can send out a listserv message to UCLA film school students and graduates and get amazing filming expertise for video projects," Aurnou said. "They were eager to work on a science-based film project, and very skilled."



The experiments provide insights into large-scale fluid motions not only on Earth but on other planets as well, Aurnou said.

Aurnou and members of his lab designed and constructed the device on which the experiments are conducted in his UCLA SPIN (Simulated Planetary Interiors) <u>Lab</u>.

Provided by University of California Los Angeles

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