



NASA Team Studies Hurricanes in Costa Rica

BY ROBERT GOODIER
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THE biggest weather research operation the U.S. National Aeronautics and Space Administration (NASA) has conducted in Central America launches today from its base at the Juan Santamaría International Airport outside San José.

A team of 100 U.S. scientists, technicians and support personnel from NASA and the U.S. National Oceanic and Atmospheric Administration (NOAA) have teamed up with Costa Rican scientists from the National Meteorological Institute (IMN) and the National High Technology Center (CENAT), as well as university students from both countries, in a groundbreaking five-week study of the origins of hurricanes.

"We came to Costa Rica because, it's much easier for us to access the area in which hurricanes develop because they develop so close to the coast here," said Jeff Halverson, deputy project scientist with NASA. "If you try to research Atlantic hurricanes they develop too far away from land and the research aircraft just can't get out to where they're born."

THE operation's name, Ticosonde-Aura/TCSP 2005, comes from its components: the Ticosonde is a joint NASA and IMN information-gathering project using weather balloons; Aura is a NASA observation satellite; and TCSP, the Tropical Cloud Systems and Processes, is a study of the dynamics of storm cloud systems, including tropical cyclones, using NASA-funded aircraft decked out with dozens of infrared sensors and cameras.

NASA's equipment arsenal includes the ER-2 high-altitude research aircraft equipped with six multispectral scanners,

two aerial film cameras, a Doppler radar and two dozen other sensors, and the remote-controlled Aerosonde aircraft with a 10-foot wingspan based out of the central Pacific coast city Quepos. In 1998, the Aerosonde became the first unmanned aircraft in its class to cross the Atlantic, a more than 24-hour trip during which it used only 1.5 gallons of fuel, according to the Web site www.aerosonde.com.

Two NOAA P-3s will fly missions alongside NASA's aircraft to investigate developing tropical weather disturbances, and the Ticosonde RS-92 balloon sondes will gather humidity measurements.

"What's important is the NOAA air-

craft can't fly above a certain altitude. They can get to the bottom and the middle of storm. NASA can fly over the top of the storm and learn about the processes and the clouds," Halverson told The Tico Times. "When you take NASA and NOAA together you can learn about entire storm from 70,000 feet to the surface of the ocean."

THE team arrived a week ago. It will begin its research today, and the projected deadline is in four weeks, TCSP project coordinator Michael Gaunce said.

The results of this and future research could help meteorologists predict hurricanes much sooner than they can now.

"This is a chance to answer some life-long questions that have never been answered before," Halverson said. "There are many tropical cloud disturbances, but very few of them develop into hurricanes. One of the mysteries is why are there so few hurricanes – about 80-90 around the globe per year – but there are tens of thousands of tropical disturbances."

Even if future hurricane warnings are made one or two days sooner than they are made now, that lead time is "critical" when there are many people to warn, Halverson said.

"Understanding the birth of hurricanes is something we have to do," he said.