

Japanese asteroid mission a success; next up, NASA

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A space mission to a nearby asteroid launched in 2005 has yielded some interesting clues about earth's early formation.

Japanese scientists on that mission [report today in the journal *Science*](#) that despite retrieving a very small sample from the nearby Itokawa [asteroid](#), the knowledge gained is huge.

“This is a great achievement for the Japan Aerospace Exploration Agency,” said Humberto Campins, a professor at the University of Central Florida and international expert on asteroids and comets. “The analysis of the Itokawa asteroid sample illustrates the wealth of information that can be obtained even from very small samples and sets the stage nicely for NASA’s OSIRIS REx mission, which is to sample a more primitive asteroid. That asteroid should help us understand the role asteroids played in the origin of [Earth](#)’s oceans and life.”

What scientists found in the Itokawa sample is unequivocal evidence that this type of asteroid is the parent of ordinary chondrites – the most common type of meteorites found on earth. Space weather morphs asteroid fragments and when they enter earth’s atmosphere they burn up, changing their chemical nature a bit. That’s why they are referred to as meteorites. The Japanese’s pristine sample has helped distinguish the original material on the rock and how it changed when it entered earth’s atmosphere. That is helpful to understanding the origin and evolution of the planet and the solar system.

Although technical glitches caused the Japanese [space mission](#) to collect a smaller sample size than had been intended, Campins said the knowledge gained offers great insight and only makes him more eager to see NASA's own asteroid mission take place.

The OSIRIS-REx mission, which targets a primitive asteroid, is scheduled to launch in 2016. Campins is part of that scientific team and believes the sample collected may hold important clues to understanding the illusive question of how the earth got its oceans.

He has reason to believe water on earth may have originally come from a primitive asteroid. Campins made international headlines in 2010 when he discovered evidence of water ice on two other primitive asteroids based on long-range observations. OSIRIS REx is an opportunity to potentially confirm those findings through a hands-on sample.

“It's very exciting,” Campins said. “I just can't wait to see what we find and what surprises Mother Nature has in store for us.”

Provided by University of Central Florida

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