

# Elite NASA scientist describes thrill of mission for captivated MCC audience

By Sally Mesarosh

When officials at Mesa Community College announced that NASA scientist Dr. Claudia Alexander planned to share her insights on the recent historic Rosetta mission, west Chandler resident and aerospace major Ricky LeDesma made sure his schedule was open.

Last November, Alexander was among an elite group of scientists watching with anticipation as the Rosetta Mission landed a probe on Comet 67P/Churyumov-Gerasimenko.

LeDesma, 30, said he was glad he had the chance to attend Alexander's lecture and meet her.

"I've been a space fanatic since I was a child, so I've been looking forward to this for months," he said. "It's a huge opportunity for me."

LeDesma wasn't alone in seeing worth in MCC's Honors Program lecture series.

Program Director Shereen Lerner, said community as well as students benefit from attending the Honors Forum lectures and hearing current research by top people in different fields.

"The students get to hear them during the day in their classrooms and then again during the evening lecture," she said.

"Listening to speakers talk about the challenges they have had to overcome to get to where they are is inspirational for students who may be facing those same challenges themselves."

As project manager of NASA's role in the European-led mission, Alexander spent 10 years preparing for the moment that would make history as the first mission to orbit and land on a comet.

"It's kind of amazing that it takes that long (10 years) to go deep into the solar system," she said.

"We had to build up speed by making three gravity assists around the earth, took a grand tour of the inner solar system, passed by Mars with an another gravity assist and passed by two asteroids to make our way into the outer solar system."

When the Rosetta spacecraft deployed its comet lander, "Philae," from an altitude of 21 kilometers, scientists waited a tense seven hours for the lander to touch down on the comet's surface.

Alexander said they were worried when the data and photos didn't arrive as scheduled, but then they began to receive photos. The lander was in a ditch, with one leg in the ditch and one leg in space.

"The panoramic camera worked, all the instruments worked," Alexander said. "The panoramic camera took an incredible picture of what's surrounding us and over us."

Scientists are studying the comet's composition, mass distribution and dust flux of the comet's nucleus, among other things.

The orbiter will follow the comet around the Sun and as it moves back out toward the orbit of Jupiter.

"It's a beautiful mission. We have made a lot of discoveries, some of which I can't tell you about," Alexander said, laughing.

"The people who have made the discoveries want to publish the findings in prestigious journals first."

Alexander told the audience that the mission was



named after the Rosetta Stone, an ancient artifact used to decipher Egyptian hieroglyphs.

"The Rosetta Stone helped us understand ancient languages," she said.

"The name Rosetta is because we think that like the Rosetta Stone, the Rosetta Mission will give us the keys to the ancient solar system."

During the lecture, Alexander told students that when she was sitting in her college classes she never thought that she would one day be a scientist involved with a mission to a comet.

She now holds a Ph.D. in physics of space plasma from the University of Michigan. All her schooling and experience led her to the job she holds today.

"When I went for the (NASA Rosetta Mission) job interview, I told them I'd love to have the job, but asked why did they want me? They told me because I was young enough to see the project through to the end!"

Meanwhile, the Philae lander is currently hibernating. Alexander is hoping the lander can get enough battery charge from more sunlight to get it back to taking commands and get the instruments going again in June of this year.

She projected that money and other considerations will delay any similar missions for a while. But she remains steadfast in her passion for planetary exploration.

"We need to study as many comets as we can because they are not identical," she said. We'll learn a lot more with every one we study. Unfortunately, though, a big flagship mission like this is hard to build. There probably won't be another Rosetta mission for 15 years."

About the Honors Forum Lecture Series: The theme for this year's Maricopa County Community College Honors Forum Lecture Series is "Frontiers and the Spirit of Exploration."

The Honors Forum Lectures are free and open to the public. The fourth and final speaker in the 2014-15 Honors Forum Lecture Series is Dr. John Medina on April 22 from 7-8 p.m. at Glendale Community College.

His presentation theme is "Frontiers and the Spirit of Exploration: The Brain Over Time." Dr. Medina is a developmental molecular biologist focused on the genes involved in human brain development and the genetics of psychiatric disorders.

Info: <https://mcli.maricopa.edu/events/honors-forum-lecture-john-medina>



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