



ALL THE RIGHT FREQUENCIES

Chileans come to Apple Valley to explore radio astronomy and a little music

BY DAVIDA SWISA JAMES ~ FOR THE DAILY PRESS



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PRESS

Chilean students visited Lewis Center for Educational Research on Wednesday as part of the GAVRT program, which allows students to operate a radio telescope in a specialized classroom. In the top row from left, Nicolas Borcoski, Leonardo Bustos,

Antonio Basso, Nicolas Ortega, Joaquin Rissetti, Kelli Cole and Dr. Steve Levin; bottom row from left, Ricardo Bustos, Gisela Corday, Felipe Borcoski, Victor Hernandez, Pamela Soto, Valeria Cuadra, Nancy Kreuser-Jenkins and Rodrigo Reeves.

APPLE VALLEY • A group of high school students and teachers from Chile visited the Lewis Center for Educational Research this week to communicate in the international language of science.

But that wasn't the only mission for the group from Concepcion, Chile, a 460-year-old city of 212,000 people near the mouth of the Biobio River on the central coast of the South American country. In addition to working with students from the Lewis Center in Apple Valley and

scientists from the Jet Propulsion Laboratory and the National Aeronautics and Space Administration, they also endeavored to communicate in another international voice: music.

When the class ended, one Chilean student asked if they could all do the Harlem Shake, an old dance that has become an Internet craze. Another of his friends readied the music on a laptop, and the first student started dancing alone in the center of the floor.

The rest of the class looked bored.

Then, as if on cue, all the students went from stillness to jumping around doing a frenzied, shaking dance that had everyone laughing. From Chile to Apple Valley and across space, the students were joined by music and science.

They're accustomed to both.

The Chilean students routinely collect and analyze data gathered by a massive antenna in Chile, sending it remotely to scientists at JPL and NASA. The trip to Southern California let them get a closer look at how that data is used.

"We trained a group of teachers from Chile in 2008," said Kelli Cole, a radio telescope operator at the Lewis Center. "One teacher, Gisela Corday, has been a very strong supporter of the GAVRT program since her training."

GAVRT is the Goldstone Apple Valley Radio Telescope, a partnership between the Lewis Center and JPL. The program teams students with scientists to conduct cutting-edge research leading to scientific discovery.

The radio telescope operators train the teachers about radio astronomy and how to use the telescope to collect data for the scientists. Ryan Dorcey, the manager of global operations, has been instrumental in facilitating the visits and training, running the antennae sessions for the Chilean teachers.

The sessions take place in Apple Valley or via phone or computer communications from Chile.

"We spend two hours on the phone with them," Cole said of the Chilean sessions, "and we guide them through operating the telescopes. In 2011, when the spacecraft Juno launched, we had the unique opportunity of inviting several teachers to attend the launch in Florida."

The Lewis Center wrote a letter inviting the Chilean teachers and students to attend the launch of the spacecraft on its travels to Jupiter.

Corday, the teacher from Colegio Concepcion Pedro de Valdivia, was here this week with colleagues and nine of her students.

The group arrived at Los Angeles International Airport and spent the first few days visiting Hollywood landmarks before heading to the High Desert.

One visiting student, Nicolas Borcoski, is a senior who attended the Juno launch in 2011.

"It was a great experience," Borcoski said. "It was a surprise, the invitation from GAVRT to visit the Kennedy Space Center and feel the moment when the space shuttle starts."

On Tuesday, the Chilean visitors made the trip out to Goldstone to see the antennae that they monitor from Chile.

"It was incredible to be at Goldstone and to see the antennae," Borcoski said. "We can see them streaming, but this is completely different to see it moving in front of you. It is giant."

Steve Levin of JPL watched teachers guide a discussion with the Chilean visitors and Lewis Center students on Wednesday about research and the differences between American and Chilean universities.

Levin, an astrophysicist whose main role at JPL is project scientist for Juno and lead scientist for GAVRT, explained that he helps to lead the people working on the science side of things while the Lewis Center works on the education side.

“Our newest campaign is that we are looking for extra-terrestrial intelligence,” Levin said. “I think it’s a really valuable way to learn about science by doing science, instead of reading about the results of someone else’s science in a book.”

The 2008 training and later trip to the Juno launch is what prompted this week’s visit.

“There was an invitation to come here and visit the Lewis Center and the same antennae that the students control in Chile,” Corday said. “We got to visit the control room and the people.”

Corday credited the Masonic Corp. of Concepcion, the board that controls the school, for providing money for the visit.

Ricardo Bustos teaches at the Universidad Catolica de la Santisima Concepcion. He participated in the start of the GAVRT program at three schools in Chile during his work with Caltech.

“In Concepcion, where these students are from, the kids were phenomenal,” Bustos said. “They really loved it. One former student of the GAVRT program at high school is now in her third year studying astronomy at the university.”

They get support from Rodrigo Reeves, a senior scientist of astronomy for Caltech works in Chile and helps to provide general support for the GAVRT program.

The program has helped to guide future Chilean scientists.

“I decided to study astronomy before the program arrived to Chile,” said Pamela Soto, a student at Universidad de Concepcion in Chile. “And I am so happy to be here.”



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Chilaen students, from left to right, Antonio Basso, Joaquin Riseti and Nicolas Borcoski dance to the Harlem Shake as Lewis Center students join them after class was dismissed Wednesday.



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Chilaen student Nicolas Borcoski uses his laptop to help visually explain the climate difference between Chile and the United States. Students from Chile and the Lewis Center for Educational Research all gathered in a circle during their first day in class to get to know each other and explore their cultural differences.

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