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### Out-of-this-world research

February 11, 2011, 03:44 AM By Heather Murtagh Daily Journal Stafi

Astronomy is not the focus of most science classes these days, but three San Mateo High School students did research in the field and presented their findings at a national conference last month.

Katherine Hsu, Larry Chew and Ryan Chew had their astronomy research projects presented at the 217th American Astronomical Society Meeting in Seattle last



Photo courtesy of Sally Seebode Katherine Hsu speaks to a astronomer about her project at the 217th American Astronomical Society Meeting in Seattle last month.

Meeting in Seattle last month. While the projects had different focuses, each student had the ability to do independent research while learning professional skills.

Sixteen-year-old Hsu, a junior, worked as part of a team of teachers and students from San Mateo and Hillsdale high schools and the College of San Mateo, to create a teaching tool to allow students to learn the temperature, distance and type of star. Designed for use by high school and college students, the tool is available online so any teacher can use it. Hsu hopes to make it more widely accessible soon.

Larry Chew, 17, and his brother Ryan Chew, 15, worked with a team of astronomers to learn more about an astronomy mystery — the dark body that eclipses the star Epsilon Aurigae every 27.1 years. Using the eclipse, the boys noted light sent to Earth is blocked by a ring which has elements within it that have yet to be identified. Using density, they established what some of the elements are, as well as calculated the ring structure around the star. What they found could be the start of forming planets.

"They provided us with the base information," said Ryan Chew. "What we did was just the icing on the cake."

Astronomy isn't offered at San Mateo High so these students came to research the topic in different ways.

Larry Chew heard about the opportunity to study astronomy outside of the classroom in 2009. He started doing research on the current project then. Ryan Chew, was intrigued by his brother's work and decided to join.

Hsu, on the other hand, enrolled at the College of San Mateo concurrently during her freshman year. She took an astronomy class there and learned of the opportunities on her own high school campus to do research.

"It's hard to stay ahead of them," said San Mateo High teacher Sally Seebode, advisor of the three students.

Traditional high school science curriculum includes labs with an expected outcome. Research is different.

"There is no right answer. That's what science is going to be. [What they are doing] is a lot more like what's really going on out there," said Seebode.

The projects were funded through the NASA/IPAC Teacher Archive Research Program, known as NITARP, which pairs professional astronomers with teachers nationwide to encourage careers in and exploration of science, technology, engineering and mathematics.

For the students, it was an untraditional learning experience in a field that has piqued their interest. And, it's a hobby that all three plan to keep.

"We don't have to limit our scientific knowledge to the earth," said Ryan Chew.

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