NASA lets Bozeman High students reach for the stars

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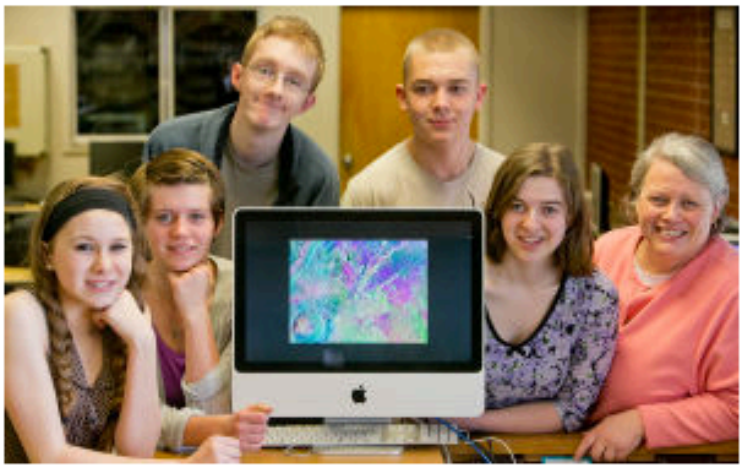

Adrian Sanchez-Gonzalez/Chronicle

Bozeman High School's Astronomy Club members, from left, Brittany Suisse, Hannah Cebulla, Matt McWhorter, Brandon Kelly, Madie Kelly and club advisor Lynn Powers have been chosen by NASA to analyze data from the surface of Mars, shown on computer, and several club members will travel to Caltech in June to learn more about astronomy research.

Hannah Cebulla and Madie Kelly may be only teenagers, but they and other students in Bozeman High School's Astronomy Club have the chance to do original research on Mars and the stars, thanks to NASA.

The students are doing such a good job, two or three will get to travel in June to Caltech and the Jet Propulsion Lab to learn more about star formation and how to conduct astronomical research.

"I'm so excited," said Cebulla, a sophomore, adding that the Jet Propulsion Lab is where she'd like to work someday.

"It's incredible," said Kelly, a junior who wants to become an astrophysicist.

Bozeman High's club is also one of five student teams remaining in the Mars Exploration Student Data Teams competition.

They've been working with NASA and Arizona State University scientists to do research on Mars, using images taken by an instrument called CRISM (Compact Reconnaissance Imaging Spectrometer for Mars) aboard NASA's Mars Renaissance orbiter.

Images taken by an instrument called CRISM (Compact Reconnaissance Imaging Spectrometer for Mars) aboard NASA's Mars Renaissance orbiter.

One image from CRISM of a region called Nili Fossae makes the red planet look as colorful as tie-dyed shirts. The colors actually help scientists determine what kind of rocks are on Mars. The students are analyzing the region to see if it would make a good landing site for a future Mars Rover, and if the geology suggests there once was water flowing on the planet and possibly the right conditions to support life.

The Astronomy Club adviser is Lynn Powers, Bozeman High library secretary, a passionate amateur astronomer who is president of the Southwest Montana Astronomical Society and a NASA-JPL "solar system ambassador."

Powers said for the Mars competition, students are preparing an online PowerPoint presentation that will be judged in April by scientists at Arizona State. The winners will get a free trip to Washington, D.C., in June to present their research at the Smithsonian Air and Space Museum.

The Bozeman High club members are so dedicated, they even gave up part of spring break to work on their project, she said.

"They're doing phenomenally well," Powers said. "It's amazing."

As soon as the Mars project is finished, the students will jump into a new research challenge. Using images from space collected by the Herschel Space Observatory, the students will analyze an area of cold, dense gas in the constellation Cassiopeia where stars are being born.

"It will be like pulling the blanket off a baby in a bassinette," Powers said. "We're going into the nursery."

The Herschel telescope has gathered thousands of hours of data that have been archived because NASA doesn't have enough man-hours to look at everything, Powers said. So the space agency has created opportunities for citizen-scientists.

Powers has been working with scientists from Harvard and Caltech and teachers from Illinois, Connecticut and Virginia to gear up for the stars project.

Astronomy Club members said they got hooked on the stars in different ways. Brittany Suisse, a sophomore, said she has always liked watching astronomy documentaries with her dad. Brandon Kelly, a freshman, said he loves watching "The Universe" in high-definition on the Science channel. Cebulla said when she was younger, she read a book on astronaut Sally Ride and "she became my idol."

"I've always been a fan of science fiction," said Matthew McWhorter, a sophomore. "The one thing cooler than science fiction is science fact."

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