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Basically that means they studied baby stars, the different ways stars form and whether those differences create any differences once they're "adult" stars, the two students said.

Lynn Powers, library secretary at Bozeman High's Bridger Alternative Program and Astronomy Club adviser, said it's exciting for students to be doing original research, "not knowing what they're going to find," instead of repeating experiments others have already done and the outcome is known.

"It teaches students how to do science, do critical thinking, and take real live data and analyze it," Powers said. "That's amazing."

Astronomy has changed from the days of looking through telescopes with the naked eye. Today astronomers look at computer screens and analyze data, said Powers, an avid amateur astronomer and Southwest Montana Astronomical Society president.

The Bozeman High students analyzed data from the Herschel telescope, named for the scientist who discovered invisible infrared radiation in 1800. The Herschel telescope has gathered thousands of hours of data that have been archived because NASA doesn't have enough people to analyze everything. So the space agency has invited citizenscientists to help out.

The students looked at stars forming in clouds of swirling gas and dust in an area near Cassiopeia called NGC 281. It's nicknamed the Pac-Man Nebula because its shape resembles the video game character.

Last June the Bozeman students traveled to Caltech in California to learn how to do Python computer programming to analyze the Herschel data. They met the other high school students on their team, who continued to work together in the ensuing months using Skype and teleconferences.

Powers said she hopes the Astronomy Club can keep working on the project in the coming year. The club will probably have to do some fundraising, she said, because NASA's education and outreach money has been "zeroed out" of the federal budget.

Kelly said she has always loved science and participating in the research conference "really drives your passion." She plans to attend Montana State University and study astrophysics.

Cebulla said she first became interested in astronomy on family camping trips, when she'd look up at the stars and think they were "the coolest thing ever." She plans to attend college and study astrophysics or astrobiology.

Powers said she and the students enjoyed visiting the Smithsonian's National Air and Space Museum, but the coolest moment of the trip for her was meeting Neil deGrasse Tyson of the Hayden Planetarium and a host of NOVA science shows. She got his autograph.

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