

High school students launch science balloons

By **Charlie Kanzig**
Correspondent

Sisters High School students from Rima Givot's chemistry class took to the field on Thursday, May 2, for the now-annual science balloon launch. It was the fourth consecutive year Givot has led this effort with her chemistry class.

Givot, along with her student teacher Samantha Petrie and a number of volunteers, worked with the students throughout the project from planning, to launch, and all the way to retrieval.

The launch of the two balloons took place early Thursday morning at Sisters Eagle Airport under clear skies. Much preparation took place prior to the release, but the real excitement came at this moment. The balloons ultimately reached an altitude of over 80,000 feet, high enough for cameras on board to record the curve of the earth.

The purpose of the balloon project is multi-layered, according to Givot.

"The helium balloons themselves help the students learn the application of gas laws," she said. "It's a way to see how gases change as you change variables such as temperature, pressure and volume."

"We use the balloons as a means to practice science so that student groups develop questions that they would like to answer having to do with the stratosphere or how other things might be affected by high altitude."

For example, one group sent seeds up and will observe how they grow in comparison to seeds that remained on earth. Another group used veterinarian-grade penicillin and will see if its effectiveness diminishes after being exposed to ultra-cold temperatures and high altitude.

"We try to have them relate their experiments to chemistry, but ultimately we allow them to try a variety of things," she said.

The payload on the balloons included small "computers" that collect data that can then be downloaded for retrieval. In addition to the materials used for each experiment the payload also included two tracking devices (GPS and short wave) as well as cameras and other instruments.

The film footage from the balloon is compelling even from the standpoint of knowing that the balloons can travel that high and that the layers of the atmosphere and stratosphere as well as the actual curved edge of the earth is visible.

"When we looked at the film the next day, it was spectacular to see the curve of the earth — we could see a good portion of it — and how thin the atmosphere really is," said Givot.

The balloons ultimately popped and the payload drifted to earth beneath parachutes. Both payloads landed within one mile of each other, southeast of Bend near Paulina Peak, and the search crew definitely overcame some challenges to retrieve them.

The first payload landed in a hemlock forest high on a ridge and Givot figured it would be hung up high in a tree. "We couldn't believe it when we found it in the one open spot in the area," she said.

The second one was more of a challenge as the team of seven sophomore searchers had to fight their way through tightly packed lodgepole pine in hopes of finding the materials. Because the GPS does not work for the entire voyage (above 22,000 feet) the other tracker is used to fill in the gaps of the location tracking. Once the parachute lands, the GPS signal can only be picked up if it is upright or partially upright.

"The signal showed a possible landing spot, but when we got to the place, we couldn't find it. We did some grid searching and had sort of lost hope of finding it due to



PHOTO BY JERRY BALDOCK

Sisters High School students launched experiments in balloons from Sisters Airport last week.

the dense growth, but finally we did find it about one mile from the first one.

"Our tracking predictors actually came very close to the actual landing spots," said Givot.

Five students served as leaders for the project. Their tasks included being in charge of weather information, managing the payloads, helium, equipment testing and communicating with each team. Those leaders included Skylar Wilkins, Christopher Lundgren, Brooke Robillard, Emilie Turpen, and Sophia Bianchi.

A number of adult helpers made the project possible, including Steven Peterson of Sisters, whose career work involves using balloons for science and research. Rod Moorehead helped with guiding the building of the

projects and the computer equipment. Ron Thorkelson led the weather team and taught them how to use the programs and instruments and pushed them to learn how to access and use the data that they collected.

The Sisters Science Club

acted as major funder of the project, according to Givot.

"The teamwork, problem-solving, planning and just seeing things through to completion are all important aspects of this sort of a project," said Givot. "We are truly practicing science."

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