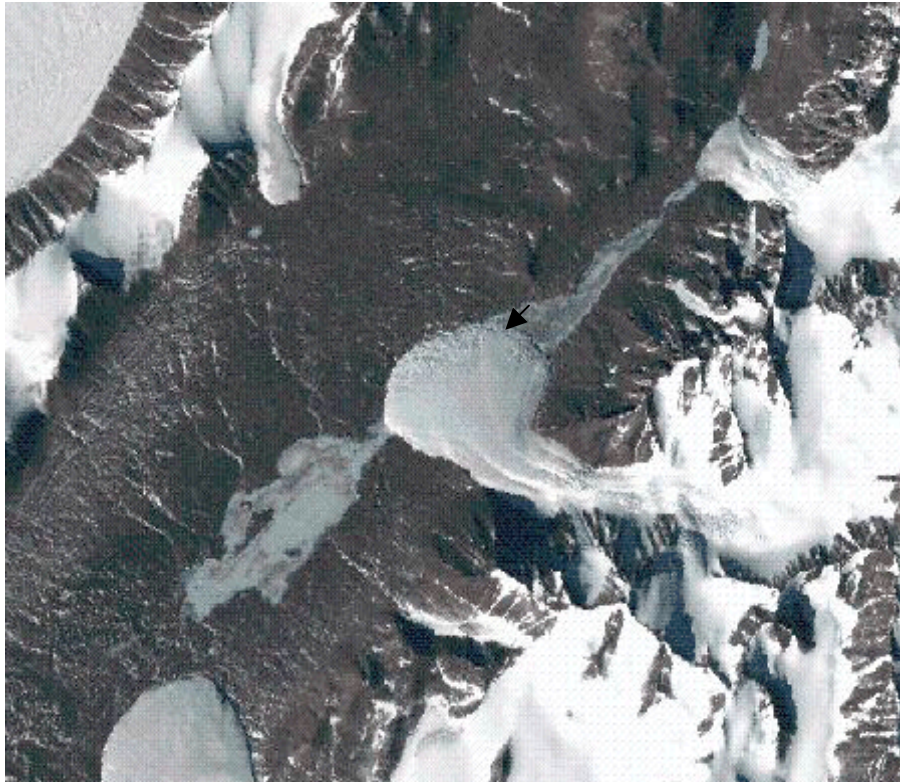


Team Member's Names: Alaina and Rachael
School: Mount Vernon Middle School, Mount Vernon, IA
Teacher: Mrs. Scarce

Proposal:

My team chose to research Maria Creek. Its ice feature is a stream. This is from the description on Lima:

A glacial meltwater stream, 0.5 mi long, which flows from the snout of Canada Glacier in Taylor Valley, Victoria Land. It drains NE, close to the glacier, entering the W end of Lake Fryxell to the W of Bowles Creek and Green Creek. The name was suggested by Diane McKnight, USGS hydrologist working in the Lake Fryxell basin, 1987-94, and alludes to the many aeolian deposits of fine sands along the creek, indicative of strong winds blowing around the S. end of Canada Glacier during the winter. Named from "They Called the Wind Maria," a song in Paint Your Wagon, the American musical play by Lerner and Loewe.



□

Latitude: 77.616667 Longitude:163.05

We've concluded that Maria Creek is located in the southwest area of Antarctica



We have chosen this ice feature because from our observations it has a glacier melting into a basin. (See arrow above on *1st* picture) I would like to know what is causing this ice feature to happen. Also the Aeolian sand is interesting and we would like to find out where it is coming from, and how does it get there? We think that this is a neat ice feature because it is similar to the dry valleys in Mars. Maybe this environment in Antarctica could help us prepare for future expeditions to Mars.

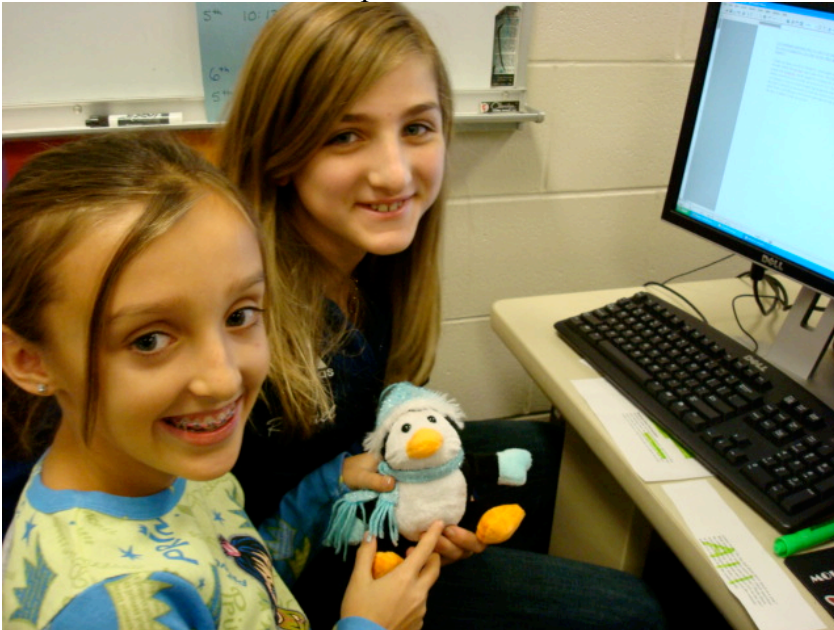
Our hypothesis is that since our ice feature starts on a mountain it's higher than the ice on the ground, so the sunlight is hitting the glacier perfectly to make it melt faster than the others. From the webchat we learned from Bob that a centimeter of melt would be a pretty warm day near Maria Creek. Maybe global warming is causing this glacier to melt faster than the others and would be something to measure.

In addition, the Aeolian sand is being caught in the basin and this would be a good place to measure depth and the spreading of the sand. This area of Antarctica is so extreme that it is similar to the environments on other planets like Mars.

We think our team should be funded to investigate this part of Antarctica because we wonder where the Aeolian sand came from. Aeolian means pertaining to winds. That means that Katabatic winds might be creating this unusual sand. Katabatic winds are winds caused by local downpour motion of cool, dense air that blows outward from the cool interior of an ice sheet toward the relatively warmer lower altitude coast. Analyzing the sand could tell us more about how the winds blow and the geologic history of the area.

If we could design a field work plan to explore the interplay of sun, wind, and ice in the area of Maria Creek we would consider the following: How much does the sand move each year? What is the most active time of year that the Aeolian sand dunes move? How much Aeolian sand does Maria creek bring to the sand dune area each year?

We would measure this by looking at LIMA satellites from over the years, and for our field work we would go out and measure the depth, take pictures, and over time, we would also find out the composition of the sand.



Thank you for considering our proposal.