Supercomputing Team #4

Project Name: Valles Caldera Eruption

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Interim Report:

Problem Definition:
There has been millions of explosions throughout Earth's history leading to new structures such as Volcanoes and Calderas. It so happens there is a Caldera near our beautiful Espanola Valley. There is a rich history of the Jemez Mountains down to the Rio Grande Valley since the eruption of the Valles Caldera eruption 1.25 million years ago. Our project focus is on the Valles Caldera which is a super volcano located in Jemez, NM. For our project we would like to study the timing of the past volcanic eruptions and make a prediction of the next eruption based on weak fractures of the Earth's crust and the pressure building in areas of the ring. We would like to specifically predict the location of the next eruption and when it will come to occur.

How do we plan to solve? We are working towards predicting the next explosion based on the location of the magma chamber and the location of the plume. Both these variables will give us a better understanding of where the next explosion may occur. Assumptions can be made based on certain flow and pressure of magma, by measuring heat differences, and differences in crust thickness such as surface to liquid rock.

Progress:
We have uncovered the main focus of the problem. We realized we had too many variables to be solved. Our original question was, If the Valles Caldera exploded what would happen to the plant life and the migration of animals. After refocusing our idea we came up with the question, when and where will the next Valles Caldera eruption occur?

Results expecting:
After further research of related Valles Caldera explosions, further interviews, along with suggested readings, we plan on making a prediction on the next eruption and where it will occur. By furthering our research we will hopefully be able to predict a precise location on where the next explosion will be. We will also locate the magma chamber which will predict where the next explosion will occur. Now that we have gathered information we can begin on coding our program. Once we insert the information and data that has been discovered we can simulate the volcano.

Works Cited

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