MSIP Proposal Outline

1. **Introduction**

What is your science question?
How does the diameter of the caldera affect the height of a volcano?

Why is question important and interesting?
Our question is important and interesting because we might find out if there's a connection between all the volcanoes ratios. Scientist who are interested in learning more about the caldera in craters or volcanoes. If the ratios are the same every time we will know that there is a connection between the two. If it is different then there is no connection between the two. If we have the opporitunity, we are also going to test craters.

List any hypotheses you may have of what the answers might be to your science question.
We think there's no connection between all the volcano's ratios of diameter to the height of the volcano.

2. **Background**

List definitions, specific knowledge, and hypotheses from other scientists about your geologic feature(s) on Mars as it relates to your science question.
Volcano- A hole in the earth's crust from which hot or melted rock and steam come out
Caldera- The volcano vent formed by a collapse of the central part of the volcano
They do form in one way
Diameter- The whole volcano
Height- It varies at different locations

Show how your features are thought to form on Mars in a sketch or image.
They are both found on earth. Ex. Mt. Kilimanjaro, Sunset Crater.

3. **Graphs**

Image ID #	Latitude (N)	Longitude (E)	Diameter	Height	Ratios

List pairs of information you plan to graph:
caldera diameter versus height
longitude versus latitude

What types of graphs will you create?
Scatter graphs

Will you plot your images on a map? If yes, explain why.
We will plot our images on a map to show our audience where we collected our data.

Is there any other way you will display your results?
Yes, we will use a PowerPoint presentation.

Show what your features look like on Mars in selected images, sketches, or pictures.
Images 1, 2, 3, 4, & 5 are attached and labeled.

Show how your features are thought to form on Mars in a sketch or image.
The heat from the center of Mars heats up and turns rocks into magma (molten rock). When the pressure gets too great, it blows it's top and erupts, forming a volcano.
Craters: A crater is formed when a meteorite plummets into the planet and leaves a hole on the surface. The object's power causes ejecta to encircle the perimeter of the now formed crater.

What geographic regions did you observe these features on Mars?
Ceraunius Thoius=Ascuris Planam Region
Olympus Mons=Daedalia Planum Region
Arsia Mos=Dardalia Planum Region
Ascraeus Mons=Ascuris Planum Region
Pauious Mons=Daedalia Planum Region
Elysium Mons=Daedalia Planum Region

3. **EXPERIMENT DESIGN**

What specific spacecraft and camera wil you use to collect data for your research?
Spacecraft: *Odyssey*
Camera: *THEMIS*

What specific geologic features will you focus on for your study and why?
We chose volcanoes/caters and how the diameter affects the height of a volcano/crater's caldera because we wanted to see if there's a connection between.

What geographic regions, if any, will you focus on for your study?
Mars canyons/volcanoes

What websites will you use to gather your data and how will you use them?

THEMIS
Themis.asu.edu
Google Mars-We can plot locations.
www.google.com/mars
NASA-We can look at pictures and get information.
www.nasa.gov
MSSS
www.msss.com/msss_images/subject/volcanoes.html

How many THEMIS images will you need to gather in order to answer your science question?
5-15 pictures

List what you will record from each image here:
•Diameter of caldera
•Height of the volcano/crater

What measurements will you make, if any?
The diameter of the caldera in meters and the height of volcano/crater in meters. We will make the measurements by using photo shop.

4. **Conclusion**

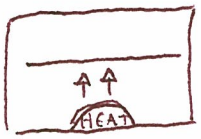
Restate your science question.
How does the diameter of the caldera affect the height of a volcano?

Restate you hypotheses.
We think there's no connection between all the volcano's ratios of the caldera diameter to the height of the volcano.

Restate why it's important to answer your question and why your proposal should be accepted for your team to use the THEMIS visible camera.

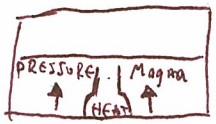
We might find if there's a connection between all the volcano's and craters ratios. It would also imply to all craters and/or volcanoes.

1



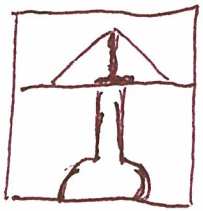
-Heat starts to rise

2



-Pressure Builds up

3



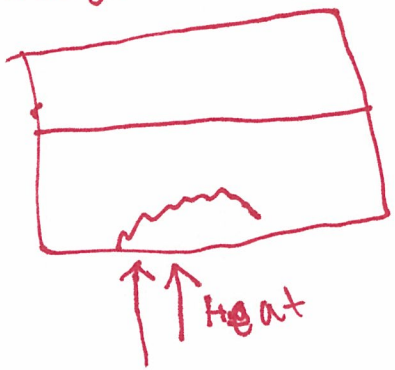
-Heat rises

4

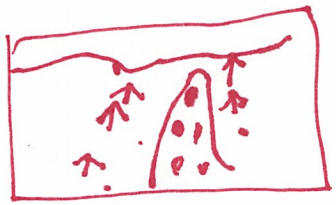
- Magma Chamber empties and overlays. Rock collapses into a hole because of pressure. This forms a caldera.

Emily Treadway

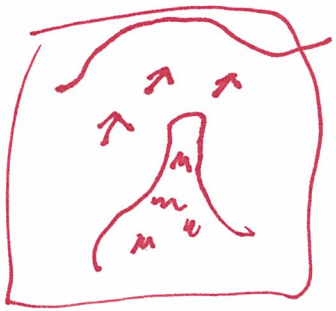
1 magma is underground



2 the magma pushes up and makes a hill



3 the magma creates pressure



4 the magma empties

5 the cave where magma carries in overtime.

mercury mine mrinteam

chrismichael

magma is deep inthe ground.

The magma pushes up forming a hill

The magma creates lots of pressure.

The magma empties.

The cave where the magma carves in overtime.

Google Mars

Regions Mountains Plains
Spacecraft Canyons Ridges
Stories Dunes Craters

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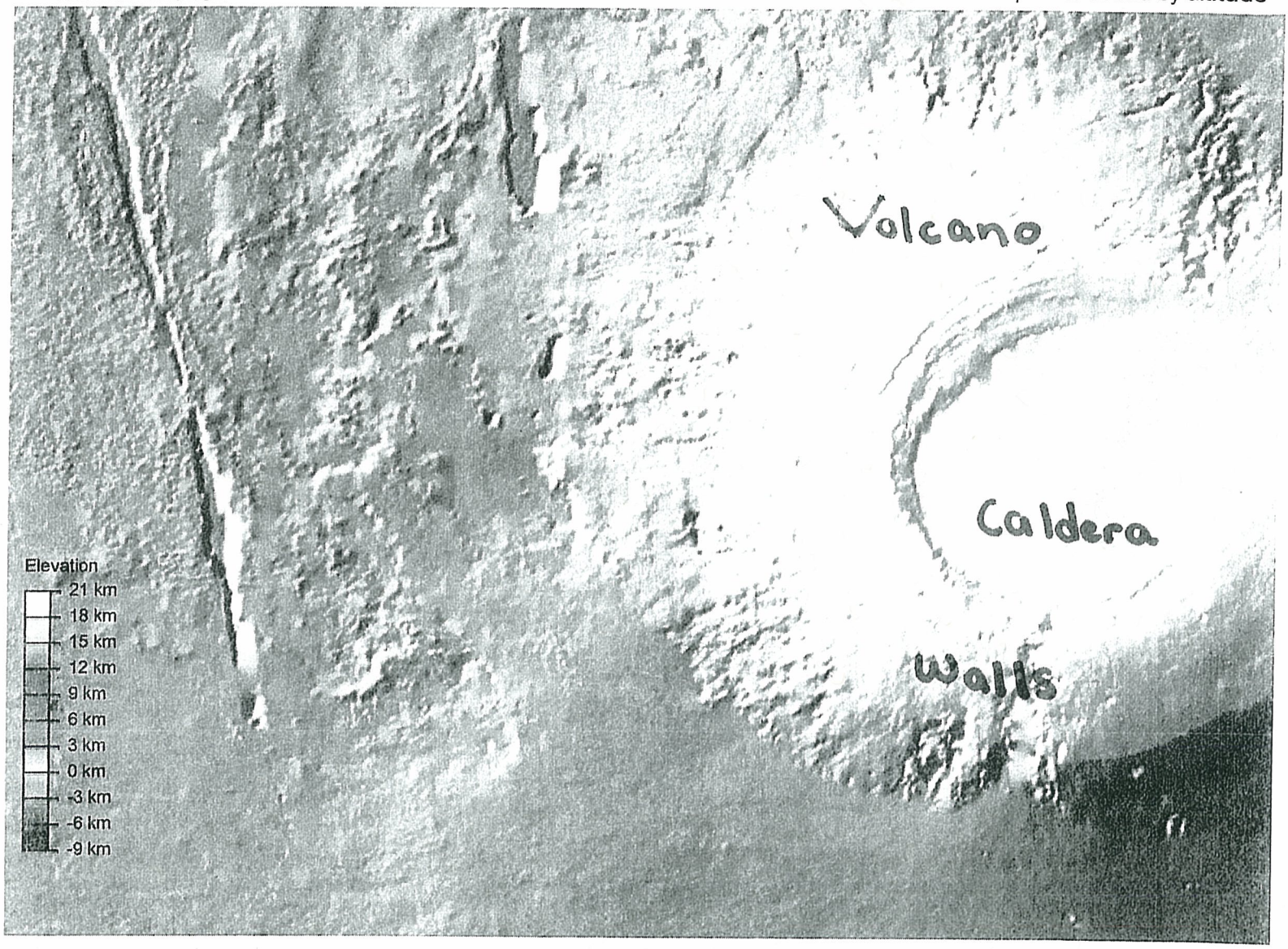
A shaded relief map color-coded by altitude



1

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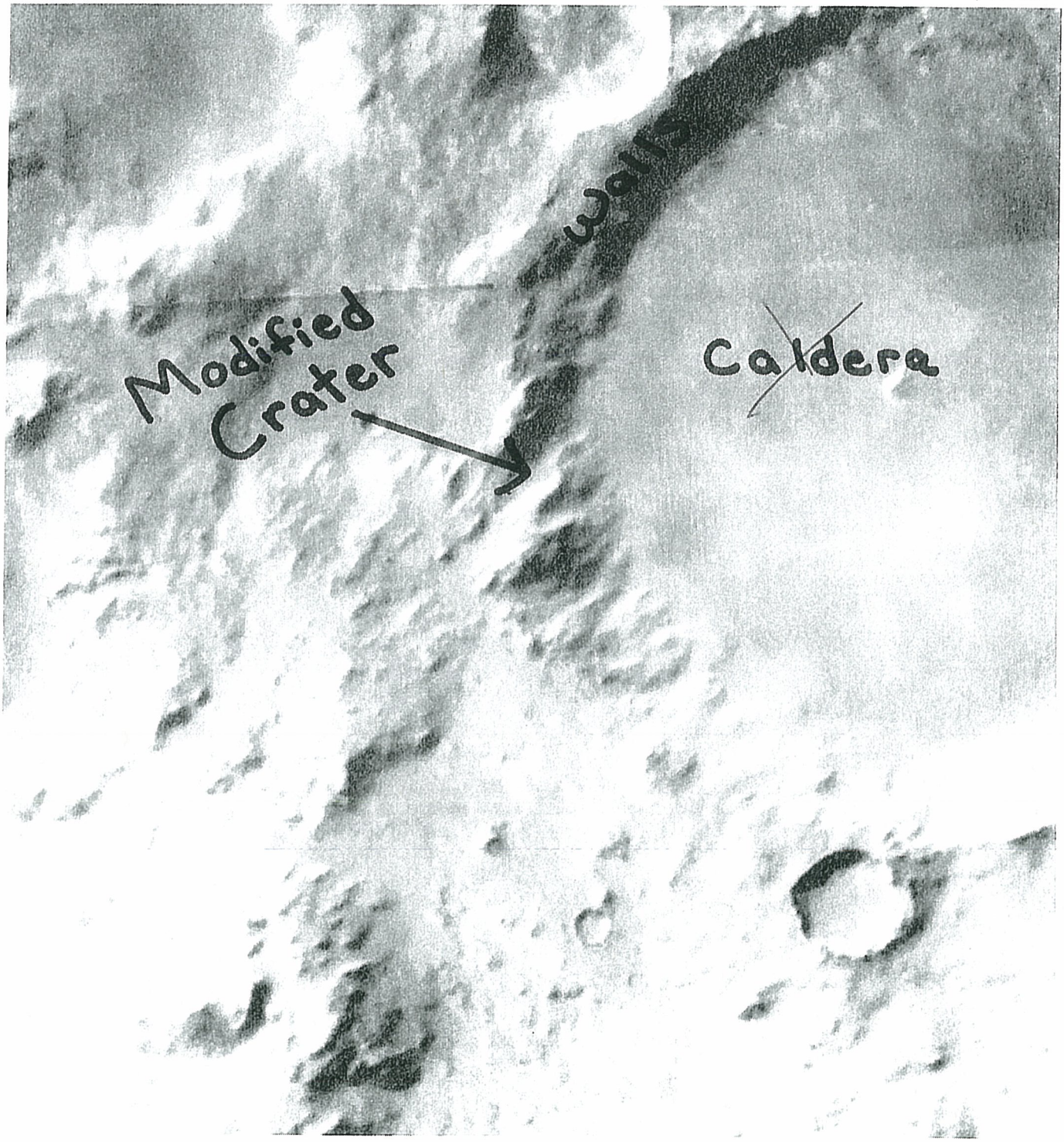
A mosaic of images from the visible portion of the spectrum



2

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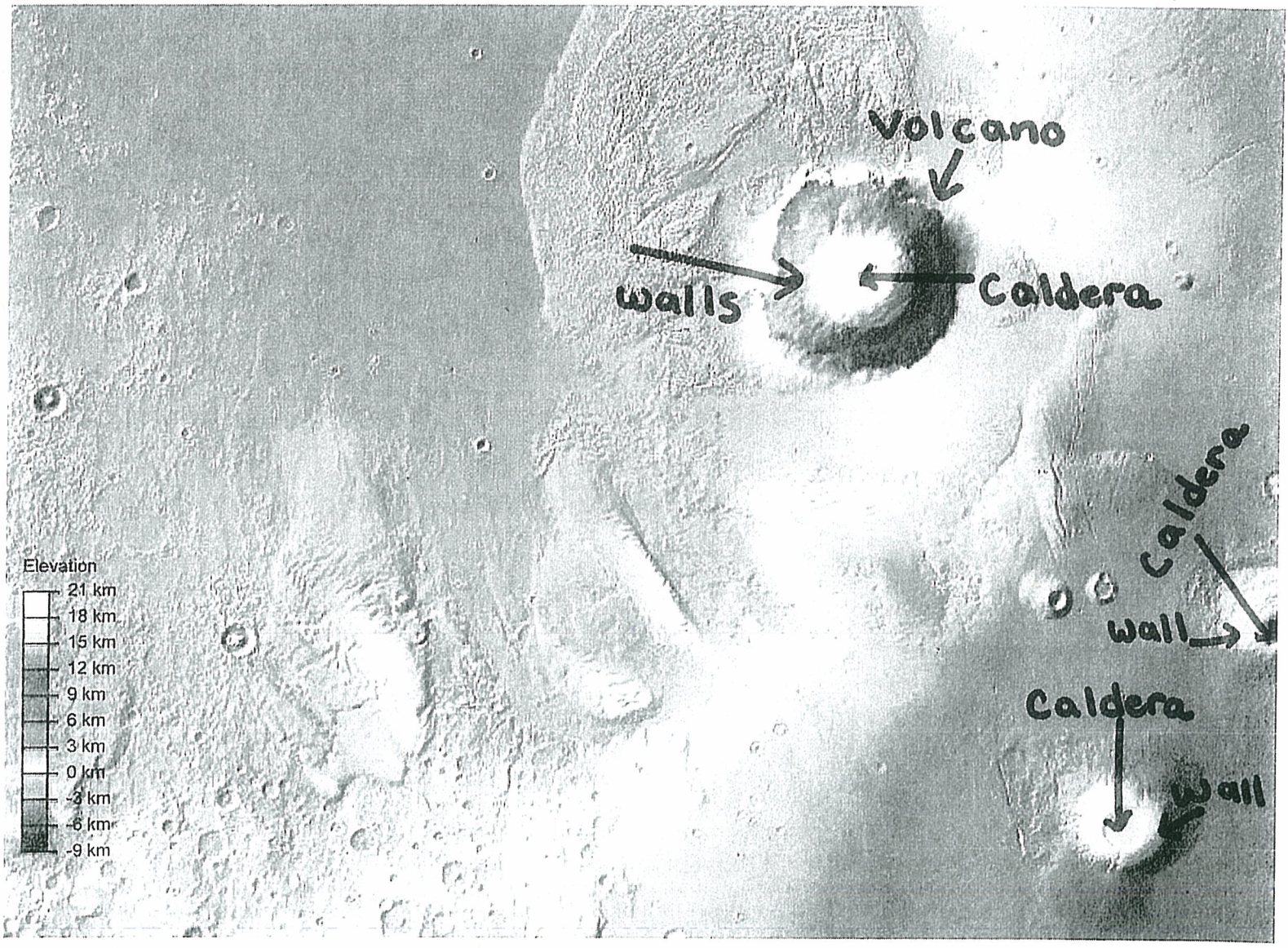

3

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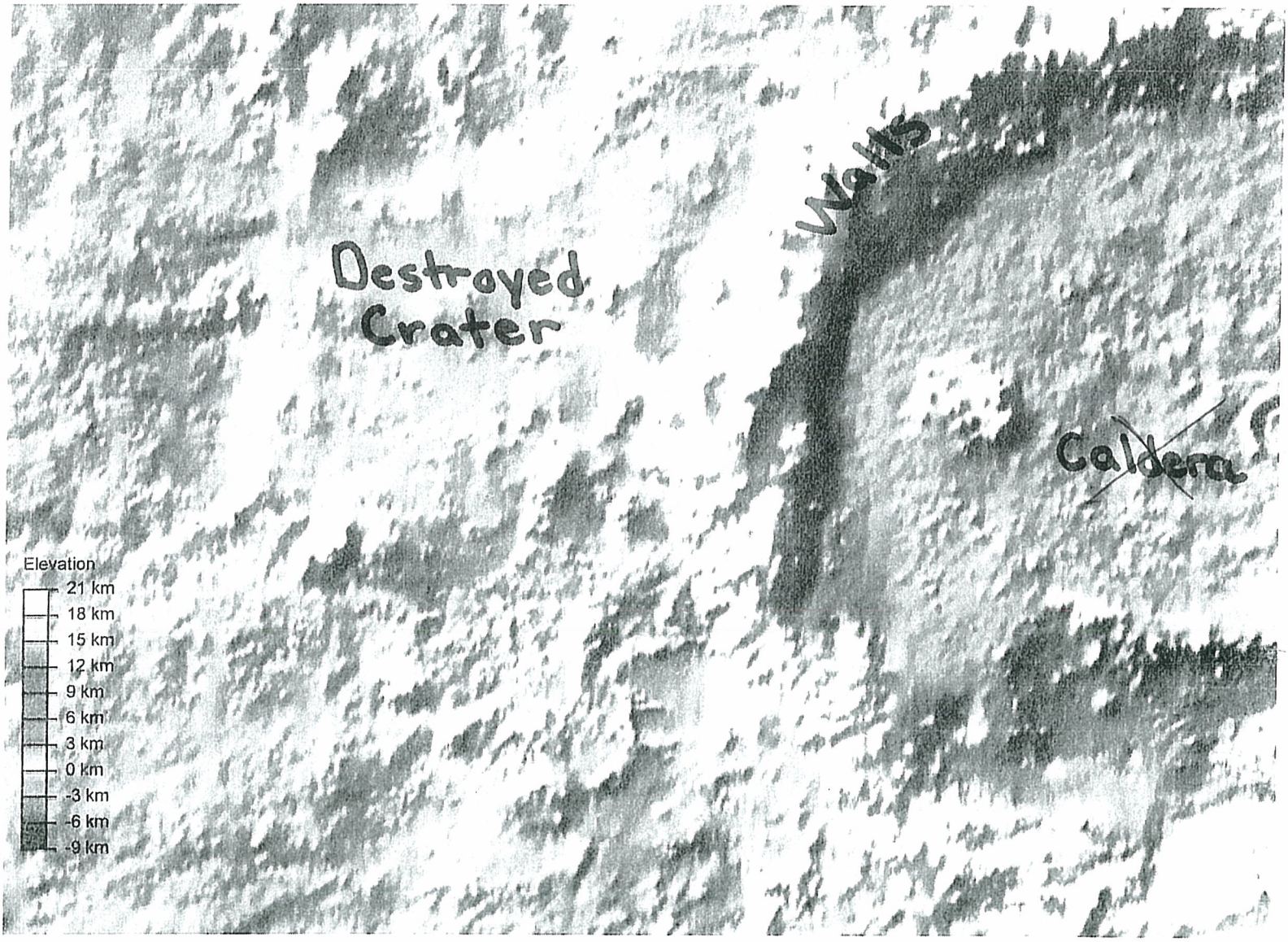

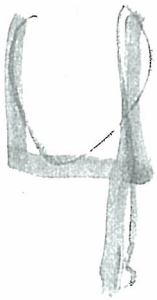

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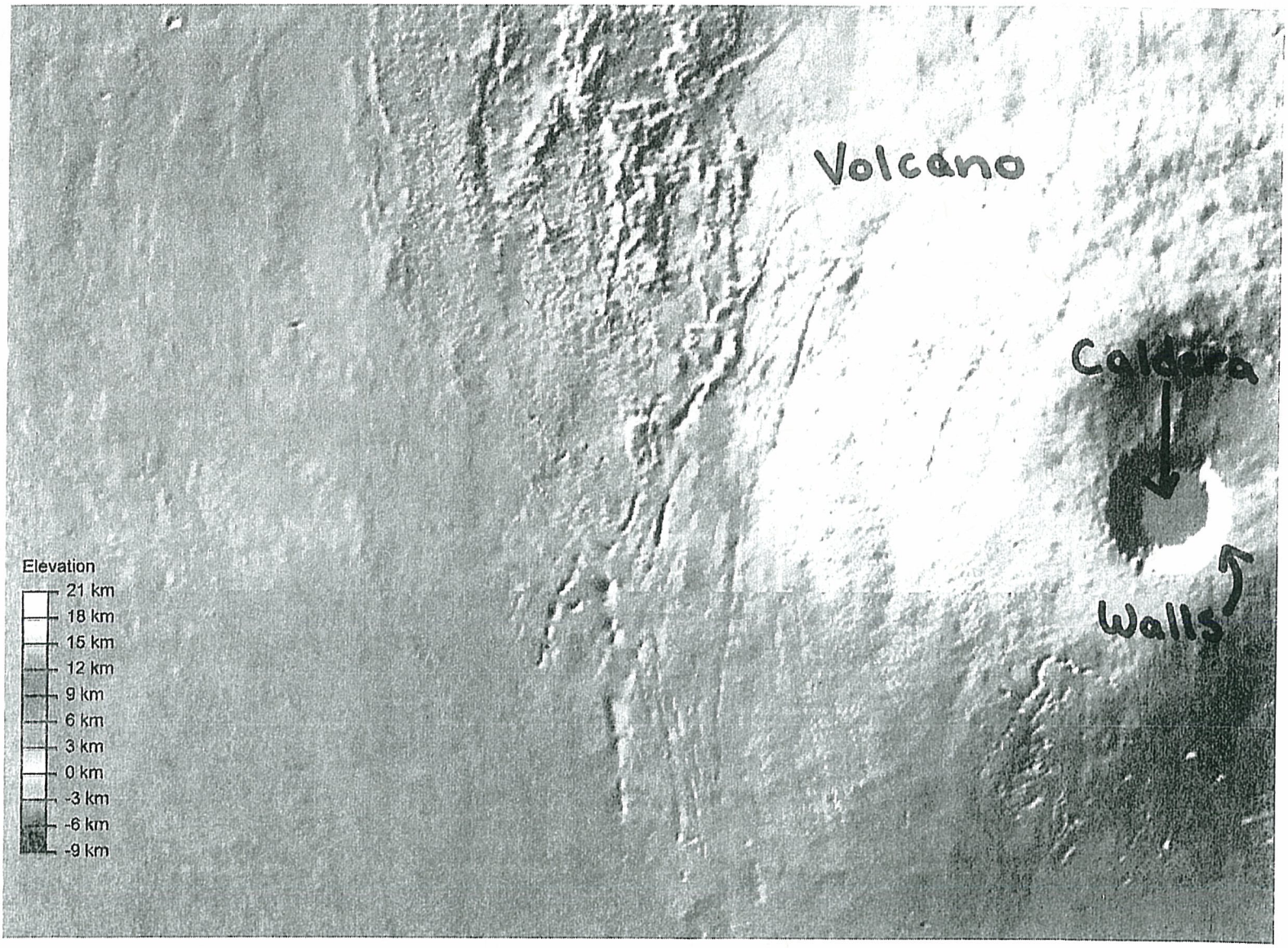

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