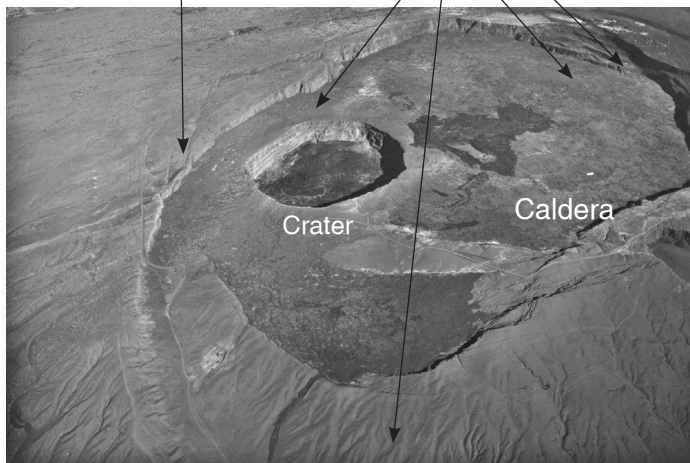


Pre-class Construction of Cardboard Caldera Box

1. If the box is deep, cut it to about 7 inches in height (so students can all see the top of the flour that will be added.) Tape bottom of box to keep flour from leaking.
2. Slip a balloon over the end of the tubing until tubing is inside the large part of the balloon. Tightly wrap electrical tape around the stem of the balloon, stretching it as you go, so that no air will leak out of the balloon from the sides when inflated.
3. Poke a tube-diameter hole in the side of the box near the bottom. Feed the tube from inside to outside until the balloon lies in the middle of the bottom of the box.
4. Tape the tubing along the black electrical tape to the bottom of the box in several places to keep it from rising up through the flour as you blow the balloon later. (You don't want your magma chamber floating to the surface.)
5. Fill box to a depth of at least 6 inches (7–10 pounds flour). If it is too shallow, the caldera doesn't collapse very well. Compact the flour with a flat block or the cover of the DVD, then smooth the top. If there isn't enough flour, mound it up above the balloon.

Ground slopes away in all directions away from caldera

Ring fractures



CALDERA vs. CRATER?

A *caldera* is a basin-shaped volcanic depression that formed from explosion or collapse and is more than a mile in diameter. A *volcanic crater*, can form the same way, but is less than a mile across.

Summit caldera of Kilauea Volcano on the Island of Hawai'i. The caldera formed by combinations of explosive eruptions and collapse by magmatic withdrawal. In the 1800s, Kilauea caldera was several hundred feet deeper than it is now. Summit eruptions filled it to its current depth by 1919. The magma chamber is 1/4 to 2 miles underground near the vicinity of Halema'uma'u Crater. That crater formed by an explosive eruption in 1924. The walls of the caldera and crater are steep and unstable, and landslides can occur at any time, particularly during strong earthquakes. This points out the changing nature of calderas.

