

DESERT INSTITUTE*at Joshua Tree National Park*

74485 National Park Dr. Twentynine Palms, CA 92277

Phone: 760-367-5535; e-mail: desertinstitute@joshuatree.org

Spring Session

2019

Geology of Amboy Crater

Information

Date/ Time: Saturday, March 16, 9 am – 3 pm

Meet at: [Amboy Crater National Natural Landmark](#), Amboy, CA

Instructor: Alessandro Grippo, Ph.D.,

Overview

Designated a National Natural Landmark in 1973, Amboy Crater was recognized for its visual and geological significance. There are a number of dormant volcanoes in the Mojave Desert, and Amboy crater is a perfect example of a cinder volcanic cone very similar to the volcanoes throughout the region. Amboy crater is a youthful cone geologically, having erupted as recent as 10,000 years ago (although most geologists agree the volcano is probably 100,000 years old). Cinder cones are small basaltic volcanoes that spit spongy fragments of basaltic lava up to an inch or two in diameter. This spongy material is called tephra. As the tephra lands after being spit into the air, it breaks into small pieces and cools. Normally, there are a lot of gas bubbles in the basalt as it cools, causing a lot of air pockets inside the rock. This makes the rock somewhat lightweight. Join Professor Alessandro Grippo on this all-day field trip.

Itinerary

- 9:00 AM meet at Amboy Crater Parking Lot
- 9:15 AM brief introduction to the hike and the geology
- 9:40 AM start hike
- 12:00 PM lunch (bring your own food)
- 12:30PM continue field class
- 3:00 PM return to vehicles

What to Bring to the Course

Optional Class Materials

- Compass/GPS device
- Camera
- Binoculars

- Field guides

Suggested Reading:

“Roadside Geology of Southern California” by Arthur Gibbs Sylvester and Elizabeth O’Black Gans
Available at the Joshua Tree National Park Visitor Centers or joshuatree.org

The 10 Essentials: Every day in the Desert

- Day pack
- 4 quarts of water
- Closed toe hiking shoes-No sandals or equivalent
- Lunch and snacks
- Clothing layers
- Hat
- Sunglasses
- Sunscreen
- Notebook and pencil/pen
- Whistle

Fitness Requirements

Participants must be in good physical condition for courses/activities in a desert that may be hot, dry, windy, and sometimes surprisingly cold.

Hike Level

Moderate

Guidelines

- You are responsible for your safety.
- Park your car in designated areas only. Parking along the side of the road is dangerous to you and the environment.
- Rattlesnakes are present in the desert. Avoid contact with wildlife. Put your hands and feet only where you can see them.
- Only you know your limits, please let the instructor or Desert Institute Representative know if you do not want to continue. This is a long hike; only go if you are confident in your balance and scrambling skills.
- Stay with the group. If you get lost, stay put.
- Drink plenty of water. If you run out, notify the instructor or the Desert Institute Representative.

- Before leaving the class, check out with the Desert Institute Representative.

Instructor Biography

Alessandro Grippo, Ph.D., Geological Sciences, University of Southern California, has done research and taught geology, oceanography, stratigraphy, environmental geology and field classes at Santa Monica College and several California State University campuses. Alessandro has a keen interest for the geology of the American southwest and loves been out there exploring, learning, and sharing his passion for Earth and its history. Alessandro also worked in the oil industry between his M.S. and his Ph.D., was a fellow faculty member at NASA-JPL for one year, and brought his students from Catalina Island to Nevada, from the Salton Sea to northern California. His interests and study, together with his passion for photography took him throughout Europe and the Americas looking for geological features.

* The Desert Institute staff/instructors will attempt to accommodate participant's needs, however we reserve the right to deny a student participation in the course due to concerns regarding health and safety issues.