## Old Woman Meteorite

The Old Woman Meteorite is the second largest meteorite found in the United States and weighed 6,070 pounds when discovered. It is 38″ long, 30″ wide and 34″ high. It's mostly composed of iron, contains about 6% nickel and has trace amounts of cobalt, phosphorus, chromium and sulphur.

The meteorite was discovered in late 1975 in the southwestern portion of the Old Woman Mountains. Its' authenticity was verified by Dr. Roy Clarke of the Smithsonian Institute.

Removing the Old Woman Meteorite from its resting place was difficult because of the rugged ground, the weight of the meteorite, and the summer heat. It took the U.S. Marine Corps to complete the job. A team from the 1st Marine Division Support Group climbed up to the site. Using equipment lowered to them by helicopter, they managed to get cargo netting under the meteorite which was then lifted by an air -crane helicopter from the mountainside to a truck staged nearby.

The meteorite was placed on display at BLM buildings and museums through out California. Public interest was high and thousands of people came to see it. Two full-size Old Woman replicas were made one of those replicas is on display at the Needles BLM Field Office in Needles, California. The original Old Woman Meteorite is on display at the California Desert Information Center located in Barstow, California.

## Meteorite's Extensive Study

After nearly two years of local display, in March of 1978 the meteorite was shipped to the Smithsonian Institute in Washington D.C. for further study and exhibition. Scientists removed a section weighing 942 pounds and closely examined it to find out its chemical makeup, mineral content, and rare gas content.

These studies consisted of numerous tests preformed by geologists. Such tests include an acid application, specific gravity, hardness, and extreme heat among others. The sample was also examined under both traditional and electron microscope.

The internal structure appears as a variation between two well known types of metallic meteorites that were never seen before. These studies suggest that this meteorite may be quite rare and one of a kind.

According to Dr. Clarke, Meteorites are the oldest objects available for scientific study and thought to be ruminants from the time of our solar system's formation. By studying meteorites scientists hope to learn more about the origins of the solar system.

## Meteorites in our orbit

A chunk of metal or rock tumbling through space is a meteoroid. Upon entering the Earth's atmosphere, the meteoroid becomes a meteor as it heats to Incandescence due to friction with the Earth's atmosphere as it is pulled by gravity.

If the object reaches ground before it completely vaporizes, it becomes a meteorite. Most meteors never reach the Earth's surface and appear as a streak of light in the night sky as it vaporizes. The average meteorite weighs about five thousandths of an ounce and are about the size of a grain of sand.

Most meteors you see in the night sky are dust size particles of rock left behind by comets that crossed the Earth's path. These fine particles are responsible for meteor showers we see periodically throughout the year.

Larger meteoroids, like the one that became the Old Woman Meteorite, are not remnants of comets. Instead, they come from the Asteroid belt located inn orbit between Mars and Jupiter and are fragments resulting from collision with other stellar bodies.

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*Desert information brochure*

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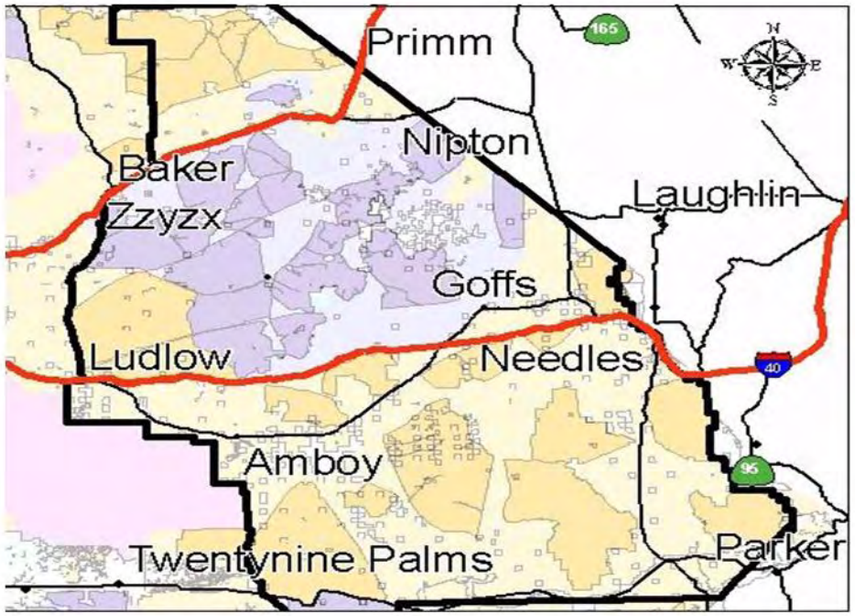
Needles Field Office




## OHV Use

Off-highway vehicles (OHVs) provide fun, entertainment, and discovery. However, many of the desert's most attractive and fragile resources can be destroyed if vehicle access is not properly controlled. Resources, cultural and natural, can be unintentionally damaged or destroyed by uncontrolled vehicle use. We all have the responsibility for the proper use of vehicles, so please remember to TREAD LIGHTLY on public and private lands. Stay on open routes of travel

**NO CROSS COUNTRY TRAVEL**

**BLM/CA/GI-2009-015+8300**

## Please Be Advised

Military explosives can be found most anywhere in the desert. Large areas of the desert were and still are used for bombing ranges and maneuvers by the U.S. Armed Forces. There may be unexploded devices that can cause serious bodily injury or death if handled. Report any such devices to the Federal Interagency Communications Center toll free at (888) 233-6518 or call 911.

The Twentynine Palms Marine Corps Air Ground Combat Center borders the western edge of the Needles Field Office Area of responsibility. This is a live bombing range. Do NOT enter the bombing range!

## Desert Safety

- Summer temperatures routinely exceed 110° Fahrenheit. Each year people are lost, injured, and sometimes die while visiting desert areas. Take precautions to prevent finding yourself in an emergency situation.

- Always tell someone your plans, or leave a visible note on the dash of your vehicle with your expected route, destination, and time of return. Stick to your itinerary.

- Carry plenty of water. Drink at least a gallon per day.

- Take food or snacks. In the heat, you may not feel hungry, but your body needs nourishment.

- Never go alone.

- Take a good map and compass.

- Carry a first aid kit, signal mirror, flashlight and matches.

- Take a CB radio or cellular phone.

- Wear sunscreen and sunglasses.

- Dress in light colored, loose fitting clothes. Long-sleeves, long pants, a hat, and sturdy shoes will help protect you from the sun, coarse volcanic material, and sharp, spiny vegetation.

- Bring a jacket with you, as evening temperatures may drop 30 degrees or more.

- Make sure your vehicle is in good working condition. Check your tires, spare tire, jack, lug wrench, and fluid levels. Always start with a full tank of gas and try not to let it fall below half a tank before filling up again.

- If you are stranded, stay with your vehicle. Don't panic. Your vehicle is easier to spot than a person walking. Lift your hood. Attempt to signal for help using a mirror or by using newspapers to make an X on the ground.

- Watch for snakes, spiders, and scorpions among the rocks.

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**In Case of Emergencies Contact the Federal Interagency Communications Center (FICC) at (888)233-6518 or call 9-1-1.**