

Meteorite Crater in Our Backyard

By Mark Hirschmann

Imagine one morning waking up in Eau Claire to see a sudden flash of light in the west about the brightness of the sun already shining in the east. A few moments later the earth shakes (6.5 on the Richter Scale). Regaining your footing and looking back to the west, you see a dark line along the horizon coming toward you very quickly. Soon you are hit by a debris-filled shock wave that knocks you down and flattens everything between Eau Claire and the Twin Cities. If you are still alive, you will hear the loud rumble of the thunder created by a Lambeau Field size meteorite striking the earth close to where Nugget Lake County Park currently exists in Pierce County, Wisconsin. The Park is about 30 minutes south of Menomonie and 30 minutes west of Osseo.

If you are familiar with the area, you may wonder where crater went. This explosion occurred about 450 million years ago when this part of Wisconsin was a shallow sea near the equator. Water and sea bottom filled that crater. Eons of erosion have blended the crater into the surrounding farmland and hills leaving just a few visible signs of a once cataclysmic event. Professor William Cordua of the University of Wisconsin – Rivers Falls has studied the Rock Elm Disturbance in depth and supports a meteorite impact is its origin.

The Bent Rock

The staff at Nugget Lake County Park is helpful directing you to several geologic features of the Rock Elm Meteorite Impact Site. (At the park office you will pay a \$5 vehicle fee and obtain a map to the boat launch and the “Underlook.”) Begin at the boat launch and look across Plum Creek to layers of horizontal, stratified rock deposited before the ancient sea receded. This is undisturbed sandstone and shale. With this in mind, drive a short distance back to the trailhead (Bluerock Scenic Overlook) and hike to the “Underlook.” In the distance of a few hundred yards from the undisturbed rock, you will see stratified rock bent and broken by strong forces consistent with a meteorite impact.

The Central Uplift

The original crater was 4 miles in diameter and about $\frac{3}{4}$ of a mile deep when it was first created. Like many craters on the moon an elevated rim surrounds a hill or mountain. This central uplift is created when the displaced rock softened by the impact rushes back to the center pushing up and solidifying. The center of the Rock Elm crater has an uplift of sandstone just north of Nugget Lake County Park.

There are three ways to experience the uplift. A geographical map will show a hill several hundred feet high and about a mile across. On a satellite view available on the Internet, note a large green patch surrounded by tiles of surrounding farmland. There are trees and shrubs on the uplift but the incline and the poor quality soil of the sandstone makes farming difficult. The best way to experience the uplift is drive around it. The uplift is private property, so stay on the county roads. There are several places to start. From Nugget Lake County Park, turn left (north) a

short way on Hwy HH. At the "T," turn left over the creek bridge, then turn immediately right (north) onto 170th Street. This begins a counter clockwise drive around the uplift of about 20 minutes. Notice the contrast between the farmland on the right and trees on the left. At the north end of the uplift, turn left (west) on Hwy 72 for short distance, then left (south) again on 190th St. There is a small cemetery on the corner. Follow the gravel road south and west until you reach Hwy CC. Turn left (south) on Hwy CC and then left (east) on Hwy HH where you can return to the Park.

The Rim

The rim of the crater is difficult to distinguish from the surrounding hills. The best vantage point is on the south rim not far from Nugget Park just north of the corner of 410th Av and 210th Street. A good map or the Park staff can help you find this location. Once there, look north and slightly east. The uplift can be seen and the far horizon is the north rim of the crater.

The Experience

There are many ways to explore the universe. Telescopes can be helpful. Sometimes the unaided eye and our imaginations can be a great way to experience the wonders of our world, if we just know where to look.

Mark Hirschmann (414-870-0974) is an amateur astronomer and a member of the Northern Cross Science Foundation.