

NEWS RELEASE

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Source:

Portland State University researchers report the discovery of Morrow County, Oregon's fifth official meteorite

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The cosmic interloper traveled millions of miles and billions of years to reach Earth, endured a fiery passage through Earth's atmosphere, waited on Earth's surface a thousand years or more, and even after it was picked up, existed in anonymity for years before it was finally recognized as being Oregon's fifth meteorite.

The meteorite is named Morrow County after the location in north central Oregon where it was recovered, researchers at Portland State University say. The 40 pound meteorite is an oriented stone, aerodynamically shaped into a cone by its passage through the Earth's atmosphere. It is the first meteorite to be recovered in Oregon east of the Cascades. Only four previous meteorites have been recovered from Oregon, making this an exceptional discovery.

The other Oregon meteorites are Sam's Valley (found 1894), Willamette (found 1902), Klamath Falls (found 1952), and Salem (fell in 1981). Three of these are iron meteorites, whereas Salem and Morrow County are both stony meteorites.

Conditions in Oregon are unfavorable for finding meteorites, with heavily forested lands west of the Cascades, and many dark-colored volcanic rocks present to the east which can be easily confused with real, dark-colored meteorites. The unfavorable combination of dark bedrock geology and high precipitation results in 34 times fewer meteorites recovered in Oregon per square mile than in Kansas, which has much light-colored bedrock and little forestland.

The Morrow County meteorite was found in a ditch beside the road during the fall of 1999 by Mr. Donald Wesson as he and his wife Debbie were driving through the wheat country of north central Oregon on their way home to Washington. The large stone remained unidentified for 10 more years. Along the way, it rested in a garden, hung out beneath a barbecue on a deck, visited a county fair, and passed through two universities before it was officially classified as a meteorite.

The meteorite sat for about eight years in Mr. Wesson's rock garden. After viewing a television program about meteorites, Mr. Wesson moved the stone to his deck and started asking around to see if it might be a meteorite. In the summer of 2009, Mr. Wesson took it to the local county fair at Castle Rock, Washington, where it was shown to Mr. Ronald Graichen, a retired geologist with the Southern Washington Mineralogical Society, who encouraged Mr. Wesson to take the rock to a university for study.

Mr. Wesson contacted Mr. George Mustoe at Western Washington University in Bellingham, Washington, where Mr. Mustoe and Dr. Bernard Housen performed tests on samples of the stone, and concluded that the rock was probably a meteorite. They suggested that Mr. Wesson contact Dick Pugh at Portland State University.

Samples of the stone were sent to the Cascadia Meteorite Laboratory, where Dr. Melinda Hutson and Dr. Alex Ruzicka classified it: Morrow County is an L6 ordinary chondrite, which has been highly shocked (S5), but minimally weathered (W1). The name and classification have been approved by the Nomenclature Committee of the Meteoritical Society, making the meteorite official. A type specimen has been placed in the repository at Portland State University.

According to Dick Pugh, a field scientist with the Cascadia Meteorite Laboratory who for many years has sought additional meteorites from Oregon, the new meteorite fulfills a dream. “For a long time Oregon has had only four meteorites, and now I’ve helped to discover the fifth.” He also notes that the wheat country in Morrow County is one of the best places to find meteorites in the state because it is being farmed in much the same way as in meteorite-productive Kansas. “The best equipment used to find meteorites has been the farm plow.” Although the exact location the meteorite was found is not known, Pugh says, “It was probably plowed up by a farmer and tossed to the side of the road. There is even evidence that the rock was hit by a plow.”

Dr. Hutson, curator of the Cascadia Meteorite Laboratory, says “Morrow County is a relatively common type of meteorite, but it stands out from other meteorites in a couple of ways. The meteorite isn’t significantly weathered but it has a distinctive yellow tint caused by weathering unlike that seen in meteorites recovered from deserts in Africa or Antarctica. Also, it has beautiful shock veins and glass, caused by a major collision in space. And the cone shape of the meteorite is very nice for such a large specimen.”

Cascadia Meteorite Laboratory director Alex Ruzicka, an Assistant Professor at Portland State, says he expects more meteorites to be discovered in Oregon. “In a way, I’m not surprised at all by this discovery. With our vigorous outreach effort I always knew the lab would help to recover more meteorites from Oregon, I just didn’t know when. Maybe this will be the start of many more to come.”

Images

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About the Cascadia Meteorite Laboratory

The Cascadia Meteorite Laboratory (CML) at Portland State University was created in 2003 to pursue a program involving meteorite research, formal education about meteorites, public lectures, and a specimen identification service for the public. The Lab houses a collection of rocks that now includes over 600 separate meteorites, up from one meteorite at PSU prior to the creation of the Lab. For more information about the Cascadia Meteorite Laboratory, go to <http://meteorites.pdx.edu>

About Portland State University

Portland State University (PSU) serves as a center of opportunity for over 28,000 undergraduate and graduate students. Located in Portland, Oregon, one of the nation’s most livable cities, the University’s innovative approach to education combines academic rigor in the classroom with field-based experiences through internships and classroom projects with community partners. The University’s 49-acre downtown campus exhibits Portland State’s commitment to sustainability with green buildings, while many of the 213 bachelor’s, master’s and doctoral degrees incorporate sustainability into the curriculum. PSU’s motto, “Let Knowledge Serve the City,” inspires the teaching and research of an accomplished faculty whose work and students span the globe.

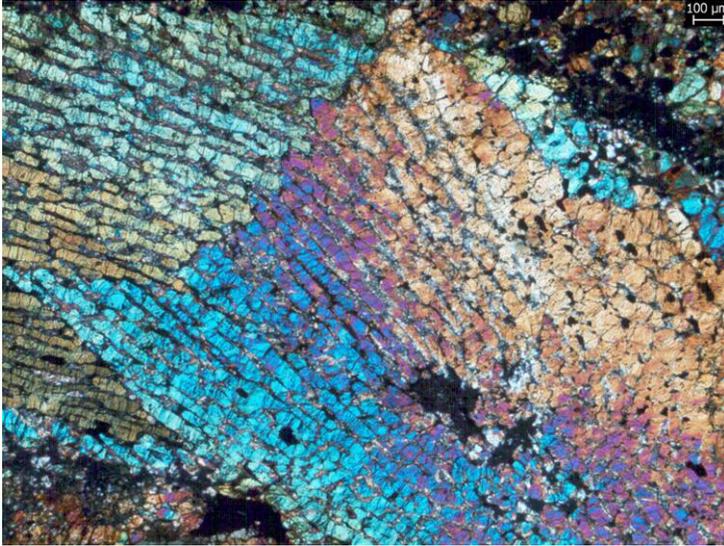
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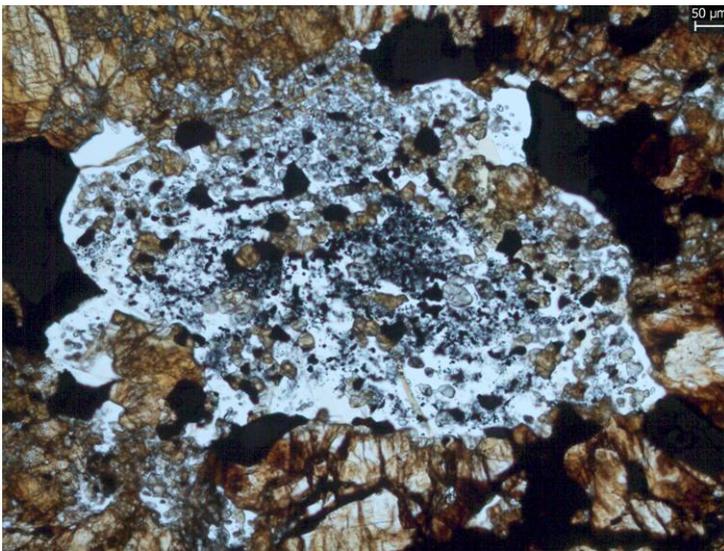
Mr. Wesson and his meteorite find.



A closer view of the Morrow County meteorite, showing the sculpted surface texture caused by passage through the Earth's atmosphere. The meteorite has a distinctive yellowish color caused by mild weathering on Earth. A portion of the meteorite at bottom right has been removed for study. At the top, another portion is missing, which was removed before Mr. Wesson found the rock, possibly by a farm plow



Morrow County as observed in a thin section with a polarizing microscope. The brightly colored minerals at center are composed of olivine.



View of the meteorite in thin section showing a type of impact-generated glass known as maskelynite, which here appears bright white. This glass was produced by a violent collision in space.