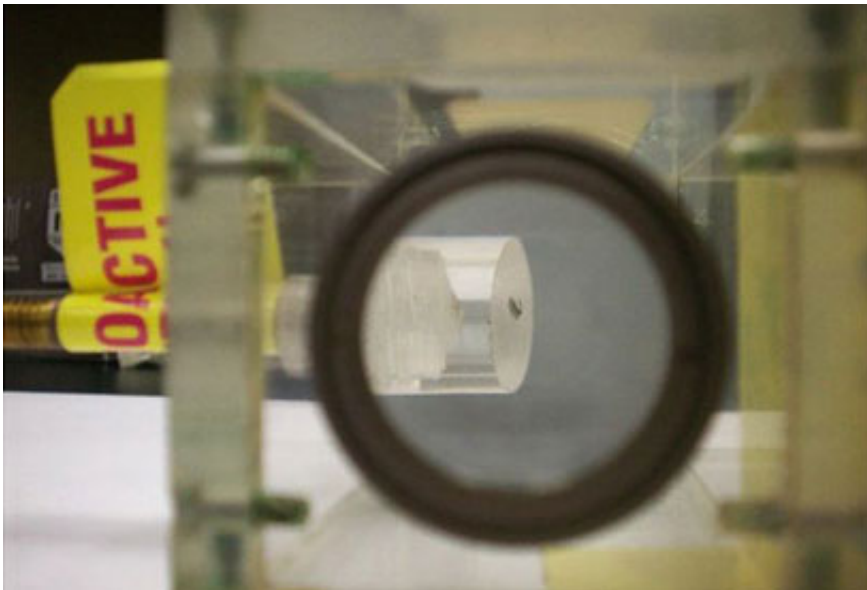


Historic plutonium sample traced to Seaborg, Manhattan Project

January 16 2015, by Sarah Yang



Side view of a speck of plutonium created by the Manhattan Project. Created by a team led by Nobel-winning chemist Glenn Seaborg, it was the first sample big enough to be measured and weighed. Credit: Eric Norman

A tiny speck of plutonium on the UC Berkeley campus is making news for its connection to a momentous point in history.

The [plutonium](#), safely secured in the campus Hazardous Material Facility, has been identified with near certainty by nuclear scientists as a sample created through the Manhattan Project, led by the late Berkeley physics professor J. Robert Oppenheimer.

The plutonium sample was created by a team of scientists led by the late Berkeley chemist Glenn Seaborg. The synthesis of plutonium helped Seaborg earn a Nobel Prize in Chemistry in 1951. As part of the Manhattan Project, it was also an achievement that helped give birth to the atomic bomb used in World War II.

"This is the first sample of plutonium that was large enough to be weighed and its mass determined," said Eric Norman, the Berkeley professor of [nuclear engineering](#) who led the analysis verifying that the plutonium was the sample synthesized by Seaborg.

Norman and his colleagues published the analysis on arXiv, an online repository of scientific papers.

The first sample of plutonium that Seaborg and colleagues synthesized—currently at the Smithsonian's National Museum of American History—was actually too small to be weighed. The sample at Berkeley has a mass of only 2.7 micrograms. By comparison, a 4.5-inch strand of human hair weighs about 620 micrograms, and a dime weighs about 2.2 million micrograms.

Seaborg's plutonium was on display at the Lawrence Hall of Science starting from 1979. It remained there until 2007, when it was removed and put into storage to make room for more interactive exhibits.

Sparked by the arXiv publication, a story today (Thursday, Jan. 15) in *Scientific American* [details](#) the history of the plutonium [sample](#) and how it recently re-emerged from storage thanks to the work of health physicist Phil Broughton at the Office of Environment, Health and Safety, and scientists from the Department of Nuclear Engineering.

"This is part of the heritage of our campus, and it is an important piece of our country's nuclear history," said Broughton. "When I saw the

plutonium, I felt like I was looking at the original moon rock."

More information: "Seaborg's Plutonium?" *arXiv*:1412.7590 [nucl-ex] arxiv.org/abs/1412.7590

Provided by University of California - Berkeley

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