



AMERICAN MUSEUM OF NATURAL HISTORY

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MAIN MASS OF RARE METEORITE PRESERVED FOR PRESENT AND FUTURE RESEARCH

AMERICAN MUSEUM OF NATURAL HISTORY IS ONE OF FIVE INSTITUTIONS INVOLVED IN JOINT ACQUISITION OF SUTTER'S MILL METEORITE

The main mass of a rare meteorite that exploded over California's Sierra foothills in April 2012 will be preserved for current and future scientific research thanks to the collaborative efforts of five U.S. academic institutions.

Together, the American Museum of Natural History in New York City, the Smithsonian Institution's National Museum of Natural History in Washington, D.C., The Field Museum of Natural History in Chicago, Arizona State University in Tempe, and the University of California, Davis (UC Davis) have successfully acquired the biggest known portion of the Sutter's Mill meteorite.

The meteorite is considered to be one of the rarest types to hit the Earth—a carbonaceous chondrite containing cosmic dust and presolar materials that helped form the planets of the solar system. Its acquisition signifies enhanced research opportunities for each institution and ensures that scientists can study the meteorite for decades to come.

"Present and future study of extraterrestrial samples help us understand the origin of our solar system as well as extrasolar planetary systems," said Denton Ebel, curator in the American Museum of Natural History's Department of Earth and Planetary Sciences. "The American Museum of Natural History collections serve as resources for scientists around the world, so it is great to be able to curate this important specimen for posterity."

The meteorite formed about 4.5 billion years ago. While it fell to Earth, it was roughly the size of a minivan before exploding as a fireball, and less than 950 grams have been found. Its main mass weighs just 205 grams (less than half a pound) and fits in a

human palm. The mass was cut into five portions, now residing in the respective institutions' collections. This is the first consortium meteorite acquisition that was scanned with computed tomography (CT) prior to its division, allowing prior knowledge of the contents of each resulting piece. The portion of the main mass acquired by each institution includes:

- American Museum of Natural History: 34 percent
- Smithsonian Institution's National Museum of Natural History: 32 percent
- The Field Museum of Natural History: 16 percent
- Arizona State University: 13 percent
- UC Davis: 5 percent

The American Museum of Natural History worked closely with UC Davis to secure specimens of Sutter's Mill right after its fall and performed nondestructive CT scans of several specimens loaned by their finders. These scans were used to determine the density of several samples to very high accuracy, confirming the type of meteorite represented by Sutter's Mill.

"With these museums and institutions storing the meteorite's main mass, it leaves it in a pristine condition to preserve for future generations to study," said UC Davis geology professor Qing-zhu Yin. "Fifty or 100 years from now, we may have new technology that will enable later generations to revisit the meteorite and do research we haven't thought of. This gives us a better chance to realize the full scientific value of the meteorite, rather than have it be just a collector's item."

For more information about the imaging of the Sutter's Mill meteorite at the Museum, go to <http://dx.doi.org/10.5531/sd.eps.1>, or see this video: <http://bit.ly/17QjUy8>

Photos can be downloaded at: <http://bit.ly/16XZKn1>

AMERICAN MUSEUM OF NATURAL HISTORY (AMNH.ORG)

The American Museum of Natural History, founded in 1869, is one of the world's preeminent scientific, educational, and cultural institutions. The Museum encompasses 45 permanent exhibition halls, including the Rose Center for Earth and Space and the Hayden Planetarium, as well as galleries for temporary exhibitions. It is home to the Theodore Roosevelt Memorial, New York State's official memorial to its 33rd governor and the nation's 26th

president, and a tribute to Roosevelt's enduring legacy of conservation. The Museum's five active research divisions and three cross-disciplinary centers support 200 scientists, whose work draws on a world-class permanent collection of more than 32 million specimens and artifacts, as well as specialized collections for frozen tissue and genomic and astrophysical data, and one of the largest natural history libraries in the world. Through its Richard Gilder Graduate School, it is the only American museum authorized to grant the Ph.D. degree. In 2012, the Museum began offering a pilot Master of Arts in Teaching program with a specialization in Earth science. Approximately 5 million visitors from around the world came to the Museum last year, and its exhibitions and Space Shows can be seen in venues on five continents. The Museum's website and collection of apps for mobile devices extend its collections, exhibitions, and educational programs to millions more beyond its walls. Visit amnh.org for more information.

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