Scientist: Sutter Mill meteorite a significant event

By Kathryn Reed

INCLINE VILLAGE – While it may seem like meteorites fall out of the sky all the time, what with two descending on Northern California this year, the reality is these occurrences are rare.

Looking like an ordinary rock, a sample of what dropped at Sutter's Mill on April 22 was passed around Thursday night to a crowd of more than 50 at Sierra Nevada College. No one was able to touch it because it was in an enclosed case.

A piece of the meteorite, next to a pen for size perspective, that was found in the Sutter Mill area in April. Photo/LTN

And no one has every touched it with bare hands because it would essentially contaminate this extraterrestrial organism.

While the rock that was on exhibit was not large, the

meteorite was the size of a minivan before it broke up over the Sierra. That Sunday morning a loud boom was heard throughout Lake Tahoe, with first reports that it could have been part of the Lyrid meteor showers.

Quing-Zhu Yin, a geology professor at UC Davis, spoke Nov. 1 about the importance of this particular particle. But his talk was scheduled before the Oct. 17 meteorite landing in Novato, so he had two astronomy events to talk about.

He said the two occurrences were very different. The one in the Bay Area came in at a very low speed and had larger pieces than the Sutter Mill meteorite. The Novato one had one piece weighing 100 grams.

NASA video cameras were able to track the trajectory of each rock landing on Earth so scientists then knew where to look for the pieces.

Yin described the Sutter Mill meteorite as “special” because it is the most centric of meteorites known to humans, with its origin likely to be Jupiter.

It was one of the rarest types of meteorites to fall to Earth – a carbonaceous chondrite, the earliest solid material to form in this solar system more than 4½ billion years ago, before the planets, including the Earth, formed.

This meteor had the highest entry speed ever recorded of a meteor, according to Yin, at 29 kilometers per second. This compares to a bullet that travels at 0.07 kilometers per second.

Yin said the Sutter Mill event is the most significant collection of space rocks since the 1960s when Apollo 11 astronauts brought back lunar rocks and meteorites fell in Mexico and Australia. He said scientists are still learning from those events.

What those particles taught scientists include:

• The age of the solar system

• Condensation consequences of chemical elements and minerals

• Discovery of presolar grains

• Supernova triggers

• Discovery of left-handed amino acids and right-handed sugars.

What this latest outer space matter will teach scientists remains to be seen.