01/16/07 West side board meeting minutes

A quorum was not present due to the icy weather conditions so no business could be conducted.

Ed Lehman provided copies of the preliminary list of field trips for 2007.The field trip meeting last weekend went well as 10 members representing 7 clubs were in attendance.

Ed also mentioned that the fee for the permit to access the White River tree farm area has gone up from $165 to $200.Only 500 permits are available.The permits are available at Work-Sports & Outdoors in both Enumclaw and Orting. For the Snoqualmie tree farm, permits are available at the Ace Hardware in North Bend.

Meeting adjourned,
Glenn Morita, Secretary Pro-Tem

Researchers Determine Star Material of Idaho State Gem

WSU Fall 2006 Innovation - College of Engineering and Architecture

Researcher from the School of Mechanical and Materials Engineering have for the first time determined the cause of the "star" in Idaho's famous star garnet, the official state gem of the Gem State.Idaho is one of only three places in the world that are known to have star garnets.

While simple curiosity initially instigated the research, the work promises to be of interest, particularly in high technology industries, says Grant Norton, professor in the School of Mechanical and Materials Engineering and associate dean of research and graduate programs for the College of Engineering and Architecture.Crystals with the garnet structure are used in solid-state lasers and are being studied for use in radiation detectors.

Norton and a colleague first wondered about the stars' origins after walking into a local jewelers a few years ago.While there was suspicion of their origin, nobody really knew what caused them.

Using donated garnets from the jewelers, Norton and Maxime Guinel, a graduate student in materials science, used transmission electron microscopy to determine conclusively for the first time that the star is caused by inclusions of rutile, a mineral composed of titanium oxide, in the garnet.The star can either contain six rays or four, based on the orientation of the tiny needles of rutile. They also determined the microstructural characteristics that affect the quality of the star.Their results were published in the Journal of Materials Science.

Rare black diamonds may have come from space

15 January 2007
NewScientist.com news service
Kelly Young

Black diamonds found in only a few places on Earth may have crashed down from space in a kilometer-sized rock, according to new research.

The diamonds, also called carbonado, are only found in Brazil and the Central African Republic. Unlike other diamonds, they are made of millions of diamond crystals that are stuck together.

They are also porous, which is a puzzle. Scientists say it would have been difficult for gas to become trapped in rocks at depths of about 200 kilometers below the Earth's surface. The intense pressure there turns carbon into conventional diamonds.

"This is the feature that first led some of us to think, well, perhaps there has to be a different alternative," says Stephen Haggerty, a geologist at Florida International University in Miami, US, and an author of the new study.

Because carbonado diamonds have only been found in two places and never in traditional diamond fields, some scientists suspected they crashed to Earth from space.

Haggerty believes they came from a large, diamond-bearing asteroid that may have fallen to Earth billions of years ago, when the planet and the Moon were being heavily bombarded by space rocks. Carbonado has been dated to be between 2.6 billion and 3.8 billion years old.

'Plums in pudding'
At that time, South America and Africa were one land mass, which could account for the diamonds showing up on two continents today, Haggerty told New Scientist.

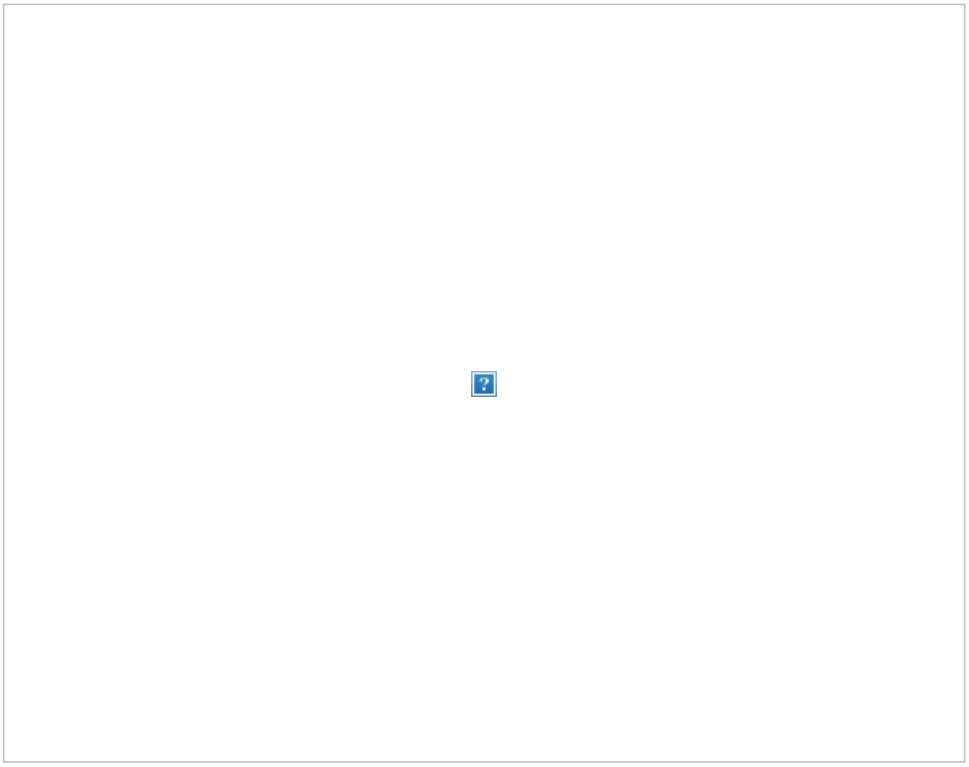
He and his colleagues believe the diamonds have ancient, rather exotic origins, forming around a star other than the Sun. Using an infrared synchrotron at Brookhaven National Laboratory in New York, US, they found hydrogen in the carbonado that indicates the diamonds came

from hydrogen-rich interstellar space.

The diamond dust from which they formed may have been released when a star exploded in a supernova billions of years ago.

The diamond dust then became part of the cloud of gas and dust from which our solar system condensed. Over time, it coalesced into larger clumps that became embedded in asteroids "like plums in pudding", Haggerty says.

The new spectral measurements of the carbonado closely resemble those of other diamonds found in meteorites, as well as diamonds seen in space (see The night sky really is studded with diamonds).



This black diamond, found in Brazil, may actually have come from space (Image: Steve Haggerty)

Some thoughts on colors of gemstones

As all faceters know, color is one of the major considerations to consider in the beauty of a stone.However, in most gemstones, color varies according to the direction in which a specimen is viewed.That is because most gem types are doubly refractive to the extent that pleochroism (the property of a crystal showing different colors when viewed by light parallel to different axes) becomes an issue.In most doubly refractive stones, of course, the best and richest hues will be found in a direction parallel to the optic axis.
This is not always the case.Take tourmaline for example: viewing normal green tourmaline along its longest dimension, that is the optic axis, will produce a muddy, smeared olive green.Whereas the direction perpendicular to the optic axis affords a bright, transparent green.With some darker tourmaline, light is almost extinguished when viewing through the crystal or optic axis direction and the appearance is dark.Materials of this kind are best cut in cabochon form, but some faceters work it, steepening the end facets to minimize the insufficient light passage.

From The Crystal and Gem News 01/07, via Gem Examiner 09/01, via Ottawa Gem Faceter’s Guild Mar/Apr 2001