

The Lake George Gem and Mineral Club -

Club News,

December 11, 10:00AM



Regular Meeting of the Lake George Gem & Mineral Club
Saturday, December 11 at 10:00AM
Lake George Community Center

Let's have a potluck brunch and look at mineral specimens! LGGMC will supply soda pop and coffee/tea along with plates/napkins/forks/knives. For the potluck, bring snacks or light lunch food of some sort to share. This might include chips & dip or cheese or cut vegetables, fruit, ham/turkey/chicken chunks, crackers etc. You could also include goodies like brownies or fudge, cookies etc. No alcoholic beverages are allowed in the Community Center.

As to mineral specimens, **we'll have a traditional LGGMC "Towel Show"**. That means bring one or more minerals, fossils, or cut stones that you'd like to show to the rest of the members. It might be something like "Here's a rock I found in my driveway, what is it?" or it could be as complex as showing a collection of Moroccan specimens that you bought. Just plan on putting them on the table on top of a towel or other piece of cloth with any labeling you think might be appropriate. This would be a good time to show what you found last summer! You can explain as much or as little as you feel comfortable doing about the specimens. I'll bring the lapidary equipment which was recently donated to the Club so everybody can see the machines. I hope the Pebble Pups/Junior Members and their families will feel welcome to come to this meeting also.

We'll have a short business meeting and we also would like your ideas on future winter meeting topics that would be of interest. After that, it's serious snack time while we are viewing and talking about the minerals or cut stones on display.

We WILL also have the silent auction of items benefitting the LGGMC and lucky buyers. **Bring your extra specimens, books, or other items** and some cash to pick up Christmas bargains!

Coming Events

Colorado School of Mines Garage Sale, 9AM-4PM, CSM Museum, Golden (prices of ... **Dec. 4**
unsold items are reduced each hour)

Dave Bunk Minerals/Dave Bunk Wholesale Winter Open House and half-price sale, ... **Dec. 4-5**
1441 W. 46th St. #8, Denver; Sat. 10-6 and Sun. 11-5 (go to website for directions)

USGS Seminar Series, "Insights into the Origin and Evolution of Continental ... **Dec. 7**
Magmatism at the Mid-Tertiary Never Summer Igneous Complex", by Lang Farmer,
10:30AM, Lecture Hall, Bldg 25, Denver Federal Center, Lakewood

Columbine Gem & Mineral Society Christmas Party/Potluck, 6PM, Mt. Shavano ... **Dec. 9**
Manor, 525 W. 16th (at J St.), Salida

- Flatirons Mineral Club Annual Show & Sale**, Boulder Co. Fairgrounds Exhibits Bldg., 9595 Nelson Rd. (Nelson and Hover), Longmont (admission charge) ... **Dec. 10-12**
- Western Interior Paleontological Society Annual Auction and Holiday Party**, 5:30-10:00PM, Lutheran Church of the Master, 14099 W. Jewell Ave., Lakewood ... **Dec. 11**
- Pueblo Rockhounds Christmas Party**, 7:30PM, Westminster Presbyterian Church, 10 University Circle, Pueblo ... **Dec. 16**

Club News

Please Welcome New Members:

Kenneth Parr (Woodland Park)

Frank Reineke (Colorado Springs)

Damon and Sheley Trumps (Green Mountain Falls)

❄️❄️ At the November 13 Club meeting, new member **Frank Reineke** shared gypsum and flint/jasper specimens that he collected this summer. President **John Rakowski** noted that we need somebody to volunteer to take **Marge Breth's** position as Secretary. Currently, **Bob Carnein** is filling in. Please contact John if you are interested in serving. John also reported that he and **Ron Yamiolkoski** sent letters to the 16 Colorado gem and mineral clubs stressing the benefits of belonging to a Colorado Federation of Mineralogical Societies and asking for expressions of interest. They hope to hear back from other clubs by January 16. **Dick Lackmond** reported that organizers of this summer's Woodland Park mineral show would like to meet with representatives of the Lake George Club to discuss next summer's shows. Dick will follow up on this. The 2011 show will be August 19-21, with a jump-start starting August 16.

After the business meeting, John introduced member **Joe Dorris**, of Glacier Peak Mining, a published novelist, school-science teacher, and miner whose claims in the Crystal Peak area have produced what are arguably the best specimens to come out of that area in years. Joe is well known for his generosity in allowing many groups, including ours, to visit his mining claims. Joe noted that he started out collecting as a kid in Idaho, where garnets and sapphires occurred near his home. He began collecting in the Crystal Peak district in 1982, after being told that old-time miners such as Ray Ziegler and Clarence Coil had cleaned the area out. He staked his first claim in 1998. His famous Smoky Hawk claim is in an old area of diggings by the Colorado Springs Mineralogical Society. Joe, along with Brian Lees, George Quist, and Tom Stevenson, has produced some of the best material ever found there, exploiting football- to basketball-sized pockets arranged in pancake-like levels spreading outward for up to 200 feet from nearly vertical feeders. Joe showed photos of these exposed during the excavation of the claim. He noted that his group washes the pockets out with water to avoid damaging specimens that are often found in a jumble in the pockets. He showed "as found" pictures of ceiling plates and the extensive reclamation process (which took 3 ½ weeks because of equipment failures). The area was purposely left rough to give grass and trees a good start. Joe noted that "white caps", which were especially common in the Smoky Hawk, result from resumption of growth of common microcline (not albite) on selected faces of amazonite crystals. He also reported finding rare-Earth minerals and phenakite, goethite, and rare pink milarite at the site.

Joe then briefly described topaz collecting from colluvial and alluvial deposits in the area. He showed pictures of the host gravel seam and described the stockpiling and mechanical separation of the topaz crystals. Most crystals, which range up to more than 900 carats in weight, include both blue and "sherry" zones. Joe answered questions after the well received program.

❄️❄️ This came in from our Minnesota member, **Ann Lembcke**, dated November 12:

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Thought I would show you where I dig Staurolites (near Royalton, MN) and pictures of what I found a few summers ago. I went out again yesterday as the sun was out, though it was only +40 out there...a wee bit nippy down by the dam. They have four locks open so there is plenty of water coming over the dam and the mist tends to float over to where I dig in the stream.



❄️❄️Here are the latest "Bench Tips" from Brad Smith. Brad has offered to provide monthly tips similar to these; let me know if you like them.

PICKLE PROBLEMS

Dropping a hot item into the pickle after soldering causes a hiss that sends small droplets of the acid pickle into the air. This will rust your nearby tools and can't be all that good to breathe either. My solution is to use a coffee cup of water next to my solder block to quench the piece and then decide if I want to drop it in the pickle.

Also, a hot pickle pot gives off fumes that bother me in my home workshop. I get around that by using my pickle cold. I mix it a little stronger than with a hot pot so that it works just as quickly. I keep it in a large-mouth peanut butter bottle and cap it off whenever I'm done using it.

PROTECTING FINISHED SURFACES

I figure that any accidental scratch I make on a piece means about 15 minutes of extra sanding and polishing. So after finishing major surfaces, I typically cover them with some masking tape to avoid any scratches when doing final work like cleanups and setting of stones. The blue masking tape used by painters is best because it doesn't leave a sticky residue when removed.

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More **BenchTips** by Brad Smith are at: groups.yahoo.com/group/BenchTips/
or: [facebook.com/BenchTips](https://www.facebook.com/BenchTips)

Pebble Pups Corner

Pebble Pups will meet at the usual time: 6PM, December 14, at the Lake George Community Center. The topic is "**The Discovery of Ancient Ice Age Mammals in the Snowmass Area**". There will be games and study of actual Pleistocene bones. If you know interested kids or home schoolers, please urge them to attend! Adults are welcome to sit in. Call **Steve Veatch** at 719-748-5010 for more information.

Many thanks to members **John Gibbs** and **Jo Beckwith** for contributing specimens for use by the Pebble Pups. Thanks also to **Punky (Wayne) Jones** for sending labeled mineral sets (and to **Dick Lackmond** for delivering them).

Last month's program was a study of geodes with **Bob Carnein**. Six Pups attended.

Steve Veatch sent the following exciting news about **the article included later in this newsletter**, which was prepared by members of the Lake George and Colorado Springs Pebble Pups:

Greetings everyone--

I have extremely important news. The editor of a rock, gem, fossil, and mineral magazine has just ACCEPTED the article the CSMS Junior group and the Lake George Pebble Pups wrote! It will be published in a future edition of Deposits magazine. I have been waiting for a response for weeks and checking my email every hour. Submitting their article was a stressful thing, as it could be rejected. Magazine editors are very picky--especially with unsolicited manuscripts. Here is part of what the editor said: "I wanted to make sure I read your article carefully, rather than just a quick read. It is very good actually! Most people separate archaeology and geology, but this is a unique piece that combines the two in a very good way! So we will certainly be using it!" This is the most exciting thing I have ever been a part of in my entire life--without doubt. I am very fortunate to work with such a wonderful group of pebble pups, youth, and Internet students. I think this will make a big difference in their lives, and urge them on to sustained and superior performance in their academic lives. And--just as important, get out into the field and find stuff. --Steve Veatch

Steve also sent the following notice:

I am working on helping with a family day at the Western Museum of Mining and Industry January 8, 2011. This will be a field trip for the CSMS pebble pups, the Lake George Pebble Pups, and the other pebble pup group in Denver. This group has joined us before for field trips. I will have more details and a press release in a few days.

NOTES FROM THE EDITOR

Bob Carnein, Editor
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Here's the article written, with the help of Steve Veatch, by a combined group of Lake George and Colorado Springs Pebble Pups and Juniors. I think you'll agree with the *Deposits* editor that it's a great accomplishment that we can all be proud of.

Ancient Artifacts: Ornamental Beads from Egyptian Tombs

by

**Chris Retzlaff, Victor Gordillo, Kyle Helmick, Krystal Arnold,
Cameron Jesse, Kurt Lahmers, Victoria Arnold, Luke Sattler**

(Colorado Springs Mineralogical Society Junior Group)

Ciena Higginbotham, Patrick Glover, Auston Mammenga

Ruth Powell, Jessica Kennedy

(Lake George Gem and Mineral Club Pebble Pups)

Ancient Egypt flourished along the Nile River for over 3,000 years. During that time, Egyptians built pyramids and temples, mummified pharaohs, put up obelisks, and created wonderful works of art. Egyptian art also included brightly colored beads in a variety of shapes and sizes. These beads were made of gold, copper, and semi-precious gemstones and were put together in elaborate ways.

The use of beads goes far back into antiquity and is an expression of behavior unique to man. Beads were among the very first manufactured products. The bead was perfected to help satisfy the basic need for personal adornment. The artistry of design, rich colors, durability, play of light, and natural materials have given the bead a unique status in personal adornment.

In ancient Egypt, beads were worn for both decorative and symbolic purposes. There is evidence that beads had symbolic meaning, had a spiritual and magic dimension, and were believed to have a link with supernatural powers. Beads in ancient Egypt were fashioned by craftsmen and were used chiefly for necklaces. Egyptians strung beads together into wide, fan-shaped necklaces called *bead collars*.

Egyptian beads were often made of ceramic or glazed clay (faience). Beads were also made from semi-precious gemstones. Craftsmen used agate, amethyst, calcite, carnelian, feldspar, jade, jasper, lapis lazuli, and turquoise to make beads. Most of the gemstones were native to Egypt. Craftsmen would take long trips into the deserts in search of rocks, gems, and minerals. They would then spend considerable time in the excavation of natural materials used to make beads.

Bead making was documented on the wall paintings in the tomb of Rekhmire, which depicts craftsmen stringing beads and drilling holes with a bow drill (Coles, 1995). Craftsmen skillfully formed beads into a variety of shapes and then polished them. Some beads were inscribed with symbolic markings. Since the strings that held beads together were made of organic material, they rotted away over the centuries, leaving the beads scattered with no clues to their original order.

Recently, the Colorado Springs Mineralogical Society's (CSMS) Junior group and the Lake George Gem and Mineral Club's (LGGMC) Pebble Pups conducted a study project, working with ancient Egyptian beads that were found in a tomb. This collection of artifacts, over 3,000
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years old, was purchased from an antiques dealer located in the Midwest. The study group worked with beads made of garnets, lapis lazuli, chalcedony, and copper. The group studied 10 beads. For each bead, they recorded the size, weight, color, raw material, and shape (Table 1). Raw-material identification was based on tests and observation under a binocular microscope with a magnification of 40X.

The location and archaeological context was lost, as the beads were excavated in the 18th and 19th centuries and sold on the antiques market. These beads, because they were made of semi-precious gemstones and of ancient Egyptian origin, will serve the purpose of this study and give the CSMS and LGGMC junior groups practice in research, laboratory procedures, and report writing.

Table 1. Morphometry

Bead number	Material	Shape	Length	Weight, grams
1	Chalcedony	disk	12 mm	.20
2	Copper	Long cylinder	9 mm	.16
3	Garnet	Sphere	3 mm	nd
4	Garnet	Sphere	3 mm	nd
5	Garnet	Sphere	3 mm	nd
5	Garnet	Spherical/facets	4 mm	nd
6	Garnet	Spherical/facets	4 mm	nd
7	Garnet	Spherical/facets	4 mm	nd
8	Lapis lazuli	Short cylinder	6 mm	.09
9	Lapis lazuli	Long cylinder	7 mm	.10
10	Lapis lazuli	Long cylinder	9.5 mm	.15

Garnet

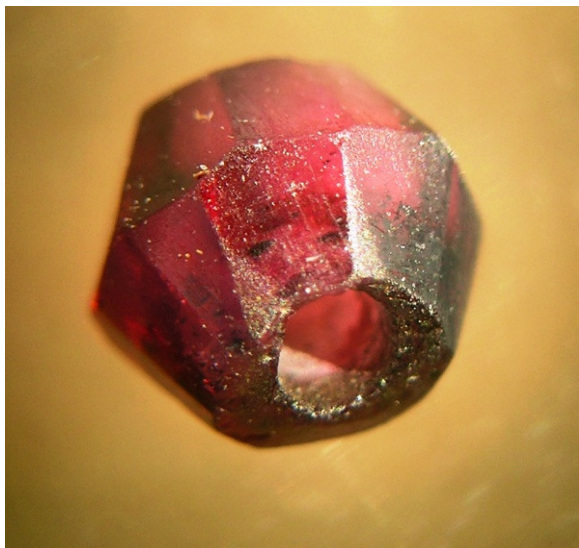


Figure 1. This red garnet bead with complex faceting has made its way through the centuries to the present. Faceted garnets are little works of art. Photomicrograph by Patrick Glover.

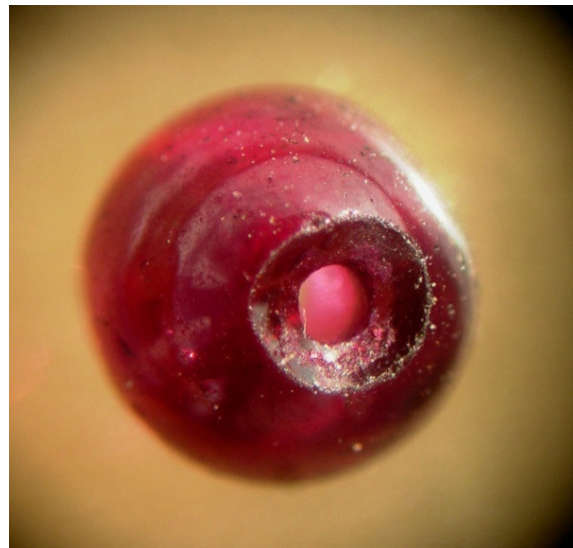


Figure 2. The making of garnet beads is labor intensive. Garnet is a very hard material. Photomicrograph by Auston Mammenga.

Egyptian craftsmen worked with a group of minerals collectively called garnet. The garnet that was commonly used by the Egyptians was a dark red, translucent semi-precious gem found in Egypt, mainly at Aswan, in the eastern desert. The garnets were worked into small spheres or had multiple facets.

Garnets are commonly found in schist or gneiss (Bishop, *et al.*, 2005). There are many kinds of garnets, including spessartine, uvarovite, hessonite, grossular, almandine, melanite, and pyrope, which is what the beads in figures 1 and 2 are made of. Because the chemical composition of garnet varies, members of this mineral group show a range of hardness on the Mohs scale, from about 6.5 to 7.5.

Carnelian

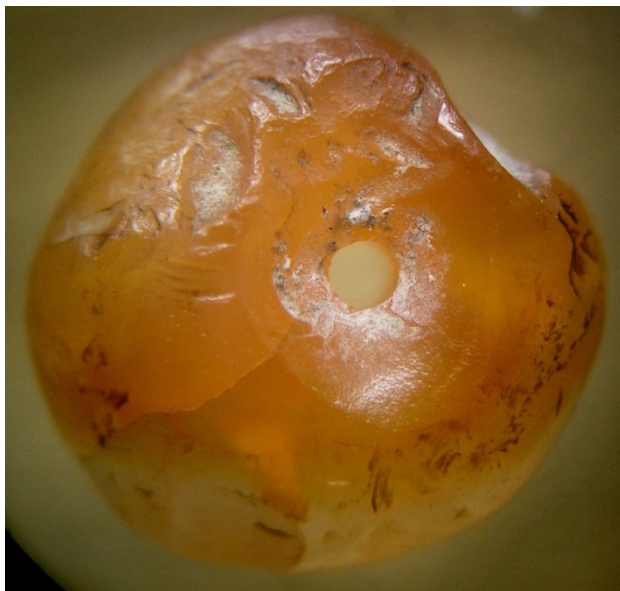


Figure 3. Disk bead of carnelian. The yellow-orange color is from iron-oxide impurities. Photomicrograph by Kyle Helmick.

Carnelian, a variety of cryptocrystalline quartz, occurs in a number of places in Egypt. This reddish-brown mineral was used in ancient Egypt for beads, pendants, jewels, and scarabs. The Egyptians believed that the stone could fight anger, hate, and envy. People of high social status were often buried with this gemstone. The orange to brownish red color comes from iron impurities. The hardness is 6.5-7, and the specific gravity is 2.58-2.64. Carnelian has no cleavage and uneven fracture. Carnelian was used in lapidary arts for its pretty color and hardness. The word *carnelian* is from the Latin word *carnis*, meaning flesh, for its fleshy muscle color. (Bishop, *et al.*, 2005).

Lapis lazuli

The most precious of all materials used by Egyptian jewelers was lapis lazuli, a dark blue gemstone with flecks of pyrite. Lapis lazuli is not a mineral but a rock comprised of the minerals lazurite, calcite, pyrite, and sodalite. Lapis Lazuli with no calcite and only small amounts of pyrite has a greater value. Lapis Lazuli has no cleavage and the fracture is uneven. On the Mohs scale of hardness, it is 5 to 5.5. The luster is dull and

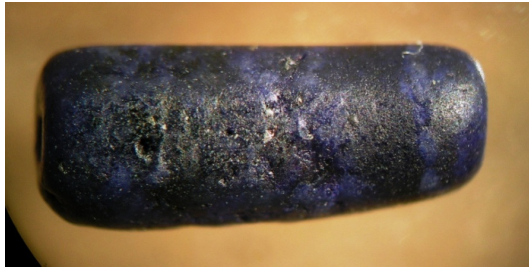


Figure 4. Cylindrical bead of lapis lazuli. Prized for its blue color since antiquity, lapis lazuli is a contact metamorphic rock whose composition and physical properties are variable. Photomicrograph by Victoria Arnold.



Figure 5. Close-up of an Egyptian lapis lazuli bead. The mineral pyrite is clearly visible. Photomicrograph by Cameron Jesse.

the streak is light blue.

Lapis lazuli was used by ancient Egyptians for jewelry, carvings, medicine, and perhaps ground to a powder and used as eye shadow. Lapis lazuli is rare, and was traded to Egypt from the area that is now Afghanistan (Coles, 1995). Other places where it is mined include Chile, Russia, Angola, Myanmar, Canada and even a few places in the United States, such as California and Colorado.

Copper

The civilization of Ancient Egypt was one of the most technologically advanced of its time. During its existence, Egyptian craftsmen went from using stone to more advanced metals like iron. The Egyptians' Chalcolithic Period, or Copper Age, lasted from around 4000 B.C. to 3150 B.C. (Reshafim, 2003).



Figure 6. This ancient copper bead was beaten into shape by Egyptian craftsmen. Copper was for everyday use in ancient Egypt. Photomicrograph by Victor Gordillo.



Figure 7. Egyptian copper often contained natural arsenic, making copper particularly hard. The climate of a dark Egyptian tomb kept this bead from corroding. Photomicrograph by Victoria Arnold.

There are many applications of copper. In the Egyptians' case, the first use of copper was to make beads and small tools (Reshafim, 2003). Copper was also used in the making of the only remaining Ancient Wonder of the World, the Giza Pyramid, along with the other pyramids. Egyptians formed copper into small wedges that were pushed into fractures in the rock in order to break them into usable sizes for pyramid building

(Morell, 2001). Furthermore, masons used copper blades to cut grooves in rocks before quarrying (Morell, 2001). Not only was copper used for beads and tools but, later on, copper was used in everything from weapons, vessels, and plates to axes, statues, and knives (Reshafim, 2003).

In order to make use of copper, the Egyptians first had to discover it, mine it, smelt it, and cast it. Copper was mined all over their territory. Copper mines were located at Buhen, Hamash, Wadi Araba, Wadi Sitra, and Serabit el-Khadim in the Sinai Peninsula (Quirke, 2001). Egypt also imported copper from Cyprus and the Near East (Quirke, 2001).

Once the copper was mined, the process of smelting began. Copper was melted in primitive furnaces that were heated with charcoal made from acacia wood (Reshafim, 2002). The ventilation for these furnaces was initially provided by blow holes and later by bellows (Reshafim, 2002). As soon as the copper was melted, it was cast by lifting the pot off the fire and pouring the molten copper into a clay mold, which created the copper item (Reshafim, 2002).

The Egyptians' use of copper helped them advance their civilization to great achievements. One of those achievements can still be seen today: the Pyramid of Giza.

References:

Bishop, A.C, Woorley, A.R., and Hamilton, W.R., 2005. Guide to Rocks & Fossils, Firefly Books. 336 p.

Coles, J., 1995. Fun with Beads Ancient Egypt, The Metropolitan Museum of Art, New York, 96 p.

Morell, Virginia., 2001. "The Pyramid Builders." *National Geographic* 200, no. 5: 78. *MasterFILE Premier*, EBSCOhost. [cited April 2, 2010.]

<http://web.ebscohost.com/ehost/detail?vid=11&hid=7&sid=ea6738ca-902f-47be-922461cadb53716f%40sessionmgr12&bdata=JnNpdGU9ZWwhvc3QtbGl2ZSZzY29wZT1zaXRl>.

Quirke, Stephen., 2001. Digital Egypt for Universities. Copper in Egypt. [Online] University College London, 2001. [Cited: April 2, 2010.]

<http://www.digitalegypt.ucl.ac.uk/metal/copper.html#>.

Reshafim, Kibbutz., 2002. Foundry Workers. An Introduction to the History and Culture of Pharaonic Egypt. [Online] 2002. [Cited: April 2, 2010.]

http://www.reshafim.org.il/ad/egypt/trades/bronze_casting.htm.

—., 2003. Metals: Sources, Technologies, Uses. An Introduction to the History and Culture of Pharaonic Egypt. [Online] 2003. [Cited: April 2, 2010.]

<http://www.reshafim.org.il/ad/egypt/trades/metals.htm>.

Author contributions: The authors designed and performed the research, analyzed the data, and wrote the paper. These students worked under Steven Veatch, leader for the CSMS and LGGMC youth.

Lake George Gem and Mineral Club

Box 171

Lake George, Colorado 80827

2010 MEMBERSHIP APPLICATION

Name(s) _____

Address _____ City _____ State ____ Zip _____

Telephone () _____ - _____ E-mail _____

Names and ages of dependent members: _____

Annual membership - dues Jan. 1 through Dec. 31 are as follows:

- Individual (18 and over) \$15.00
- Family (Parents plus dependents under age 18) \$25.00

Annual dues are due on or before March 31. Members with unpaid dues will be dropped from the roster after this date. **Anyone joining after August 30 shall pay one half the annual dues.**

I hereby agree to abide by the constitution and by-laws of this club.

Signed _____ Date: ____/____/____

I have previously been a member of Lake George Gem & Mineral Club. Yes ___ No ___

My interest areas include:

Minerals ___ Fossils___ Lapidary ___ Micromounts ___
Other _____

I would be willing to demonstrate any of the above for a club program or educational activity? If yes, which: _____

Please indicate which of the following activities you might be willing to help with:

Writing _____ Editor _____ Mailing _____ Local shows _____

Club Officer _____ Programs _____ Field trips _____ Refreshments _____

Questions about the club or club activities? **Contact John Rakowski (719) 748-3861**

Lake George Gem and Mineral Club
P.O. Box 171
Lake George, CO 80827

The Lake George Gem and Mineral Club is a group of people interested in rocks and minerals, fossils, geography and history of the Pikes Peak/South Park area, Indian artifacts and the great outdoors. The club's informational programs and field trips provide an opportunity to learn about earth sciences, rocks and minerals, lapidary work and jewelry making, and to share information and experiences with other members. Guests are welcome to attend, to see what we are about!

The club is geared primarily to amateur collectors and artisans, with programs of interest both to beginners and serious amateurs. The club meets the second Saturday of each month at the Lake George Community Center, located on the north side of US Highway 24 on the east edge of town, sharing a building with the county highway shops. **In the winter we meet at 10:00 AM. From April through September, we meet at 9:00 AM, to allow more time for our field trips.**

Our organization is incorporated under Colorado law as a nonprofit educational organization, and is a member of the Colorado, Rocky Mountain and American Federations of Mineralogical Societies. We also sponsor an annual Gem and Mineral show at Lake George, where collectors and others may purchase or sell rocks, minerals, fossils, gems or jewelry. Annual membership dues (Jan. 1 through Dec. 31) are \$15.00 for an individual (18 and over), and \$25.00 for a family (Parents plus dependents under age 18).

Our Officers for 2010 are:

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