

The Lake George Gem and Mineral Club -

Club News

April, 2017



It is
with
great

sadness that I report the passing of a member of the LGGMC's leadership group. Mark (aka Michael) Stephan died of a sudden heart attack on March 26. Mark had volunteered to chair the club's Show Committee for this year, and he also planned a series of articles about major shows elsewhere for the newsletter (his report on the Tucson show appeared in the March newsletter).

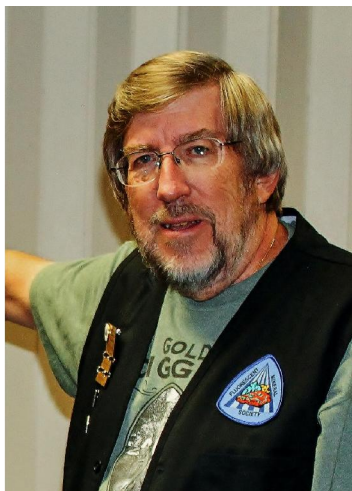
This was posted by Christine Ford on the LGGMC Facebook page: "We are having a celebration of life gathering for Lake George resident **Mark Stephan** on 4/8 at 3pm at the Cliff House in Morrison. Mark loved it there and it is run by one of his very dear friends of 20 plus years....."

Reminder: April 8 Meeting Starts at 9:00 AM (summer hours)

Program for the month: Saturday April 8:

Our business meeting will be followed by a presentation by **Conrad North**, national (actually, international) President of the Fluorescent Mineral Society.

Conrad North Bio:



Conrad is currently the President of the Fluorescent Mineral Society (FMS), an international organization of professional mineralogists, geologists, curators, amateur collectors, and others who study and collect fluorescent minerals. The organization's mission is to bring together people who are interested in fluorescent minerals, and to introduce the public to the hobby of fluorescent mineral collecting. The Society has roughly 400 members in 43 states in the U.S. as well as 12 foreign countries.

Conrad provides informational talks and demonstrations on fluorescent materials and processes to Geology Clubs, Schools, Scientific Organizations, and Scouting Groups. He also assists organizations in the creation of fluorescent displays and providing ultraviolet (UV) educational material.

He is a former professional photographer, an avid fly-fisherman, and author with published works in local publications as well as magazines such as Rock and Gem. His spare time is spent wandering the hills at night in search of Colorado fluorescents, and finding space for those finds in his basement.



Fluorescent fluorite from Fourmile Creek, Fremont Co., Colorado (Carnein photo and collection)

We still have some Lake George Gem & Mineral Show tee shirts that are available in sizes L and XL for \$15. These have the small club logo on the left front chest and the large logo on the back. They are very high quality Hanes shirts. We are also ordering new LGGMC ball caps that should arrive in time for the meeting.

Also, during the meeting, **we will continue a silent auction** for some cool specimens (maybe one or two fluorescents?) and other items donated by Club members. If you have "extra" items that you'd like to donate, please bring them and we'll add them to the auction.

Coming Events

✓ ✓ Several mineral, fossil, and geology clubs meet relatively nearby and encourage visitors. These include:

>**Cañon City Geology Club**, meets on the 2nd Monday of the month at 6PM in the United Methodist Church, Cañon City;

>**Colorado Springs Mineralogical Society**, meets on the 3rd Thursday of each month at 7PM in the Colorado Springs Senior Center, 1514 N. Hancock Ave., Colorado Springs;

>**Columbine Gem & Mineral Society**, meets on the 2nd Thursday of each month, 6:30PM in the meeting room, Mt. Shavano Manor, 525 W. 16th (at J St.), Salida;

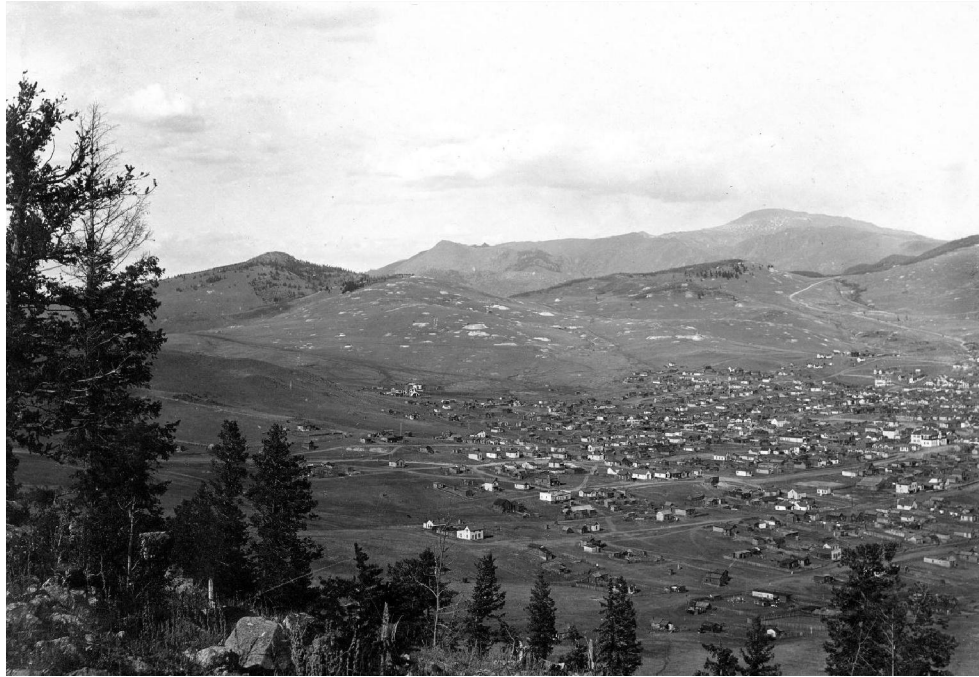
>**Pueblo Rockhounds**, meets on the 3rd Thursday of each month at 6:30PM in the Westminster Presbyterian Church, 10 University Circle, Pueblo.

MEMBERS OF THE LAKE GEORGE GEM AND MINERAL CLUB PRESENTING PAPERS AT SYMPOSIUM ON GOLD AND SILVER

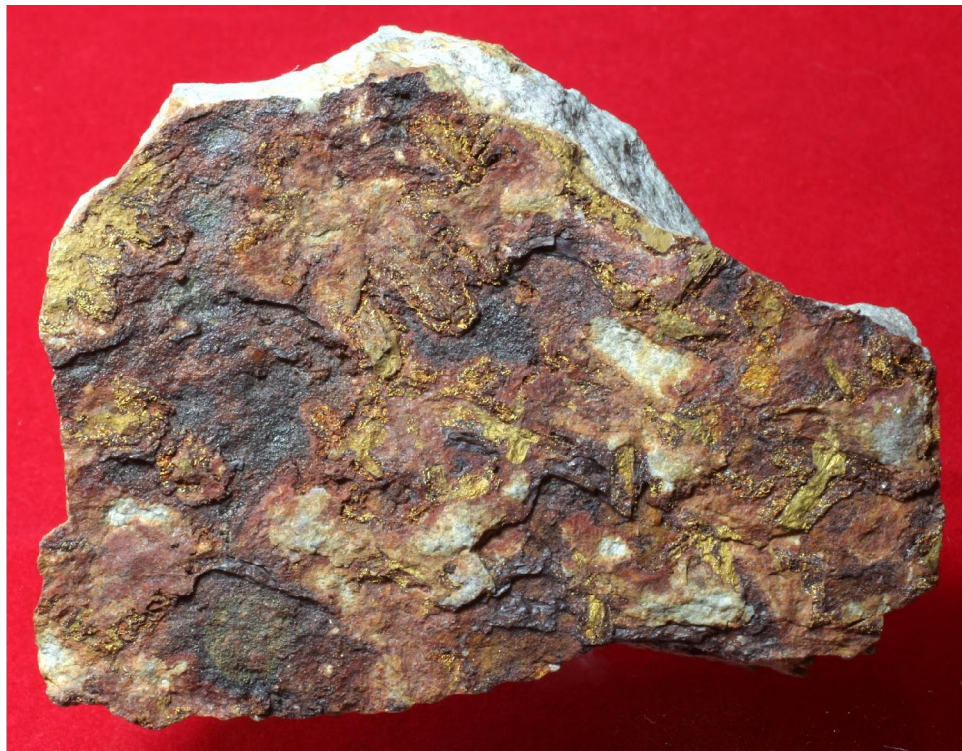
Steven Veatch, a member of the Lake George Gem and Mineral Club, is writing a detailed history of Cripple Creek, to be presented at a symposium on Colorado gold and silver deposits this summer. Bob Carnein, the Club's Newsletter Editor, will present a paper on the geology and minerals of Cripple Creek. Other speakers will talk about their work on a half-dozen other gold and silver mining districts in Colorado. Talks are designed to appeal to a wide audience, including mineral collectors, history buffs, and professional geologists. The symposium will include two days of incredible field trips. Veatch and Carnein will co-host a trip to the Cripple Creek/Victor mining district. Besides some superb photo opportunities to see some of the rocks that host the district's ores, the trip will include a two-and-a-half-hour tour hosted by Newmont/CCV personnel at the Cresson mine, near Victor.

Save the date: Fri.–Mon., July 21-24, **Gold and Silver Deposits in Colorado**, a symposium cosponsored by the Friends of the Colorado School of Mines Geology Museum, the CSM Museum, DREGS (Denver Region Exploration Geologists Society), and Friends of Mineralogy, Colorado Chapter. "The event will feature two days of talks (July 22 - 23) and two days of field trips (July 21 and 24) to historic Colorado gold and silver mining areas, focusing on the Front Range and the northern half of the Colorado Mineral Belt." Registration cost for the symposium is \$100; \$50 for students. A Saturday-night banquet featuring a talk by Ed Raines on the history of silver will be held at Golden's Table Mountain Inn. Each field trip costs \$40. A complete registration form will be available soon. More information is available here:

<https://www.facebook.com/LikeCSMGeoMuseum/posts/1822491981371516>



Cripple Creek, looking northeast. The knob to the left is Rhyolite Mountain. Just beyond the town are Mineral and Carbonate hills, and in the background is Pikes Peak. Teller County, Colorado. Photo date: 1906. Credit: U.S. Geological Survey.



Native gold after calaverite, Cripple Creek district. (Carnein photo and collection)

✓ ✓ **Pete Modreski** and others sent notices of the following upcoming events:

Fri.-Sat.-Sun., Mar. 31-Apr. 2, Fort Collins Gem & Mineral Show, sponsored by the Fort Collins Rockhounds Club, at the McKee 4-H Building, Larimer County Fairgrounds/The Ranch, I-25 exit 259. 4-8 p.m. Fri., 9-6 Sat., 10-5 Sun.

Tues., Apr. 4, 10:30 a.m., USGS Rocky Mountain Science Seminar series, “**Understanding the years to months preceding eruptions at Yellowstone caldera**”, by Christy Till, Arizona State University. Visitors are welcome; in the Building 25 auditorium (enter the Federal Center at the main gate, Gate 1, on Kipling St.; park east of building 25 and use building entrance E-14).

Wed., Apr. 5, 4:00 p.m., CU Geological Sciences Seminar, Boulder, **Fast and furious or slow and steady: rates of subduction and crustal melting** (with potential lunch talk too), by Daniela Rubatto, Australian National University, Benson Earth Sciences Building Auditorium (room 180). All welcome; refreshments are served at 3:30 in the 2nd floor atrium.

Thurs., Apr. 13, 4:00 p.m., **Mineralogy of the Earth’s Interior**, by Dr. Joseph R. Smyth, Mineralogist and Mineral Physicist, Department of Geological Sciences, University of Colorado-Boulder. **Friends of the Colorado School of Mines Geology Museum’s “First Thursday” lecture series** [but this month, on the 2nd Thursday] on the CSM campus in the Ben H. Parker Student Center, Ballroom E, Maple Street, Golden. Socializing at 6:30 p.m. and the lecture will start at 7:00. Admission is free and all are welcome.

Thurs., Apr. 13, 7:00 p.m., Heritage Exhibit Lecture at the Western Museum of Mining and Industry, Colorado Springs: Mindy S. Vogel, Geologist, U.S. Forest Service, “**Rock, Paper, Forest Service: A Summary of Mining and Permitting on Forest Service Lands.**” A Heritage Lecture to accompany the new temporary exhibit (Feb. 9 – June 3), “**Minerals We Use Everyday: Mined from Our National Forests**”. To attend this free lecture, please call 719-488-0880 or respond by e-mail at rsvp@wmmi.org (a 6 p.m. reception will probably precede the lecture). For more information see the WMMI website, <http://www.wmmi.org/home>.

Fri., Apr. 14, 6:45 p.m., **North Jeffco Gem & Mineral Club Silent Auction**. APEX Community Center, 6842 Wadsworth Blvd., Arvada. Setup at 5:30, auction begins at 6:45. All are invited.

Fri.-Sat.-Sun., Apr. 14-17, Colorado Mineral and Fossil Spring Show, Crowne Plaza Hotel - Airport, 15500 E. 40th Ave. Denver, CO; 9 a.m. to 6 p.m. Fri. & Sat., 9-5 Sunday. Free admission. See <http://www.rockygems.com/colorado-mineral-fossil-spring-show-2017.html>. Saturday evening at the show, 6-9 p.m., will be the **2nd Annual Colorado School of Mines Geology Museum Fundraiser & Social**, including a silent & vocal auction.

Wed., Apr. 19, 4:00 p.m., CU Geological Sciences Seminar, Boulder, **Carving the Grand Canyon and Places Like it: Developments Toward the Integration History of the Colorado River**, by Andy Darling, CSU; Benson Earth Sciences Building Auditorium (room 180). All welcome; refreshments are served at 3:30 in the 2nd floor atrium.

Thurs, Apr. 20, 7:00 p.m., monthly meeting of the Colorado Scientific Society, featuring a talk by Scott Denning, Atmospheric Sciences, Colorado State University, “**Simple, Serious, and Solvable: The Three S’s of Climate Change**”. At Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood. All are welcome. Social time 6:30, meeting begins at 7. See www.coloscisoc.org for more info.

Sat., Apr. 22 (Earth Day), **March for Science, Denver**. 10 a.m. to 3 p.m., Civic Center Park (Colfax Ave. & Bannock St.), Denver. See <https://www.facebook.com/events/1349869341753329/permalink/1422737527799843/> and <https://www.facebook.com/groups/1243413865743907/>. “The March for Science is a celebration of our passion for science and a call to support and safeguard the scientific community. The March for Science champions robustly funded and publicly communicated science as a pillar of human freedom and prosperity. We unite as a diverse, nonpartisan group to call for science that upholds the common good and for political leaders and policymakers to enact evidence-based policies in the public interest.” **A similar march will occur in Colorado Springs, Acacia Park, noon-5PM.**

Sun., Apr. 23, 8 a.m., **Earth Day Geology Hike on North Table Mountain**, to include seeing the Table Mountain lava flows, sedimentary rocks of the Denver Formation, and the zeolite locality in the middle lava flow at a former paving stone quarry, now part of Jefferson County Open Space. A 1.3-mile hike each way; meet at 8 a.m. at the trailhead at Easley Way & Ulysses Way, on the southeast side of North Table Mountain. To be led by USGS geologist Pete Modreski. **Please note change in date & time from what was announced earlier, so as not to conflict with the March for Science -**

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Denver (see above). For more info or to confirm attending, please contact (weekdays) pmodreski@usgs.gov, 303-202-4766, or (weekend contact info) pmodreski@aol.com, cell 720-205-2553.

Sun., Apr. 23, noon (lunch), 1 p.m. (lecture), “**Geology of South Park**”, presentation at the monthly meeting of the Florissant Scientific Society, by Peter Barkmann, Colorado Geological Survey. Probably to be held at the Dinosaur Ridge, Dinosaur Discovery Center, Morrison. See <http://www.fss-co.org/> for details, or contact Beth Simmons at cloverknoll@comcast.net . All are welcome. Peter plans to follow up this talk by leading a 1-day geology field trip across South Park, tentatively scheduled for Sunday, June 25.

Sat.-Sun., April 29-30, 9 a.m. – 4 p.m., “**Announcing another ridiculously exciting Book/Garage Sale**” at the **Colorado School of Mines Geology Museum** 1310 Maple St., Golden. “Thousands of maps; hundreds of books, journals, minerals, fossils, etc. Prices vary by item or box. Most prices will drop throughout the event. Information: 303-273-3815.”

Sat., May 6, 11 a.m. – 2:45 p.m., **Colorado Mineral Society's Silent and Verbal Auction**, Holy Shepherd Lutheran Church, 920 Kipling St. (3 blocks north of West 6th Ave.) Lakewood, CO 80215. “Minerals, fossils, faceted stones, lapidary pieces, books, jewelry, and fluorescent minerals. Door prizes every half hour, raffle at 2:45pm. Special verbal auction at 1:00 pm of museum quality specimens donated by special dealers. Abundant parking, refreshments, and easy handicap access. A few auction tables reserved for only children to bid on. Checkout will begin at 2:45pm (cash or check only). **A special invitation is extended to non-CMS members to participate in this auction as sellers and buyers.** Limit of sales to three flats of materials. Sellers can get copies of bidding slips on our club website (fillable and printable pdf file): see <http://www.coloradomineralsociety.org/> . Checkout will be by bidder number, so contact Leslie Osgood at 303-986-4488 for a bidder number and/or seller letter. Any questions about the auction should be directed to Ben Geller by phone at 303-550-5993 or by email at geller520@gmail.com .”

Thurs., May 11, 7:30 p.m., monthly meeting of the **Colorado Chapter, Friends of Mineralogy**. 7:30 p.m., social time to meet & talk with members, and all are invited to bring specimens to show or pictures to share as PowerPoint or .jpg images. 8:00 p.m., formal meeting and program—speaker & topic still TBA at this time. VIP Room, Denver Museum of Nature & Science. All are welcome. See <http://friendsofmineralogycolorado.org/events/> for more info.

Sat., May 13, Friends of Mineralogy, Colorado Chapter, Silent Auction. Clements Community Center, 1580 Yarrow St., Lakewood CO, 12:00-4:00 (setup begins at 10:30 a.m., auction begins at 12:00, verbal auction 1:00, all tables will close by 3:00 p.m., checkout follows). For more info see <http://friendsofmineralogycolorado.org/> .

Sat., May 13, Dinosaur Discovery Day – Boy Scout Day at Dinosaur Ridge, Morrison, CO. Scouts as well as the public are invited.” Parking will be off-site at the Bandimere Speedway overflow lot located east of C-470 and south of Alameda along S. Rooney Road. Signs will be posted. Parking is \$5 per car, paid as you enter. More than 80 earth scientists and other volunteers, including certified Merit Badge Counselors, assist with the event.” There is a registration fee for participating Scouts, and a \$4 per person charge for persons (over age 3) who wish to take a bus tour of the ridge” (no charge for just a walking tour). For full information see <http://www.dinoridge.org/scoutdays.html#bsa> . The next Dinosaur Discovery Day will be Saturday, June 10.

Fri.-Sun., May 26-28, Fossil Fish Dig, Kemmerer, Wyoming. Friends of Dinosaur Ridge is sponsoring a field trip to collect fossil fish at a private quarry in Kemmerer, WY. The registration fee of \$550 per person (\$525 for Friends members and volunteers) includes transportation to and from Kemmerer, 2 nights lodging, 2 breakfasts and 2 lunches, 2 speaker sessions about the fossils, and 2 days (4 hours each) digging for fossils. Registration and full payment is due by May 5. For full info and a copy of the registration form, please write to volunteer@dinoridge.org.

Fri.-Sat.-Sun., June 2-4, Pikes Peak Gem & Mineral Show, sponsored by the Colorado Springs Mineralogical Society. At Mortgage Solutions Financial Expo Center, 3650 N. Nevada Ave., Colorado Springs. 10-5 Fri. & Sat., 10-4 Sun.

Thurs.-Sun., June 8-11, Fairplay Contin-Tail rock, gem, and mineral show, MiddleFork RV Resort, 255 Highway 285, Fairplay, CO

Fri.–Mon., July 21-24, Gold and Silver Deposits in Colorado, a symposium cosponsored by the Friends of the Colorado School of Mines Geology Museum, the CSM Museum, DREGS (Denver Region Exploration Geologists Society), and Friends of Mineralogy, Colorado Chapter. “The event will feature two days of talks (July 22 - 23) and two days of field trips (July 21 and 24) to historic Colorado gold and silver mining areas, focusing on the Front Range and the northern half

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of the Colorado Mineral Belt.” More information about the symposium is at: <https://www.facebook.com/LikeCSMGeoMuseum/posts/1822491981371516> . Registration cost will be \$100; students, \$50; banquet, \$40; each field trip, \$40. A complete registration form will be available soon.

✓ ✓ Please welcome the following new members:

Rich & Kim Davis
Terry Erickson
Rebecca Gray
Kayla Grosz
Cathy Johnson & Ralph Montoya
Terry Leyenberger & Mary Branson
David & Debra McGraw
Lisa Murray
Charissa Schmidt & Ralph Moel
Mike Sterkel & Teri Wait
Carlton Van Buren

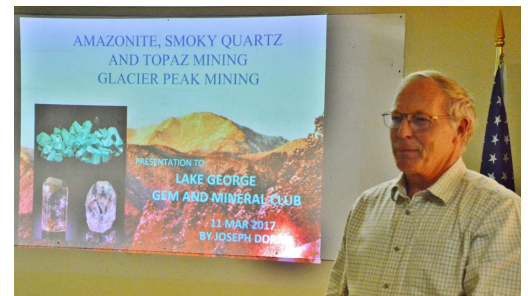
✓ ✓ **Bob Baker** sent this list of field trips, starting in May. Check the website for details; more info on signing up will follow:

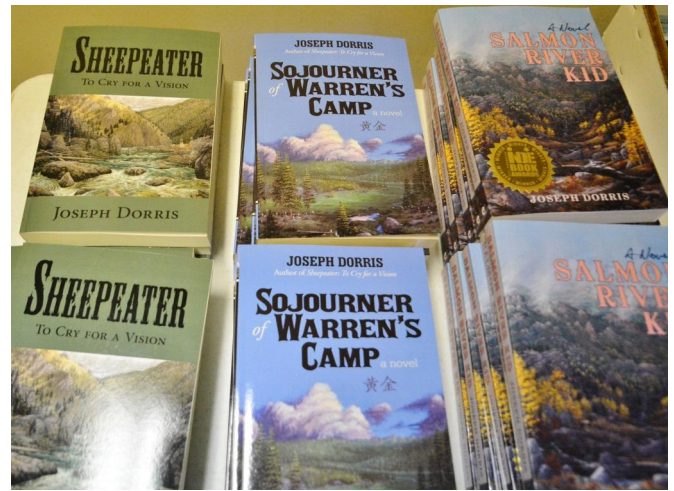
May 13: Patience/Piety claims (great or new members; easy access; smoky quartz, fluorite)
May 24: Baculite Mesa (fossils; great for new members; in conjunction with Cañon City club)
June 3: Sedalia Copper Mine (almandine garnet, magnetite, etc.; long, hard climb to collecting area)
June 6: Arroya Gulch (tiny gemmy almandine garnet; easy)
June 10: Badger Flats (magnetite, fluorite, barite; easy; good for new members)
June 17: Hartsel (blue barite; easy; good for new members)
June 18: Calumet mine (epidote, magnetite; some steep slopes)

Many others are also planned; more next month. If you'd like to lead a trip or suggest a locality, contact Bob at: bobsboards46@gmail.com; 719-464-7102

✓ ✓ **Bob Carnein** will do a class on the basics of mineral identification on April 29 for the Cañon City Geology Club. Details will be at that club's website.

✓ ✓ **Frank Rosenberg** sent the following summary and photos of our March 11 program: Our club member and TV reality show star of The Prospectors, **Joe Dorris**, gave an exciting presentation on amazonite, smoky quartz, and topaz mining by his company, Glacier Peak Mining.





✓ ✓ **Steve Veatch** sent the following article about a recent Pebble Pups outing:

LAKE GEORGE GEM AND MINERAL CLUB'S PEBBLE PUPS START FIELD SEASON

By Steven Wade Veatch

John Rakowski and Steven Veatch took the Lake George Gem and Mineral Club's Pebble Pups out in the field near Tarryall, Colorado on March 18. This kicked off the 2017 field-trip season for the club's Pebble Pup group. The parents enjoyed lively discussions while the Pebble Pups scoured the countryside looking for specimens.



John Rakowski, a Pebble Pup leader, is demonstrating the use of a pick to the eager group of Pebble Pups. Photo by S.W. Veatch.

Everyone found something, especially magnetite specimens. Other finds included milky quartz and feldspar crystal groups. For some of the pups this was their first experience hunting for specimens in the outdoors.

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These excited Pebble Pups are ready for anything! At their last Pebble Pup class, they were taught field collection techniques. Photo by S.W. Veatch.



There's nothing like a field trip to hunt for rocks and minerals. Pebble Pup on the right has a rake for digging specimens out of a hole. Photos by S.W. Veatch.

More Pebble Pup field trips are being planned for the summer and fall. Information is provided to Pebble Pups by email, the club newsletter, and on the Pebble Pup Facebook page.

✓ ✓ **Wayne Orłowski** sent several interesting links, including the following:

FREE Printable USGS PDF TOPO! Maps: A quick and easy way to download any 7.5-minute topo

National Geographic has built an easy to use web interface that allows anyone to quickly find any 7.5 minute topo in the continental U.S.A. for downloading and printing. Each topo has been pre-processed to print on a standard home, letter size printer. These are the same topos that were printed by USGS for decades on giant

bus-sized presses but are now available in multi-page PDFs that can be printed just about anywhere. They are pre-packaged using the standard 7.5 minute, 1:24,000 base but with some twists:

- Page 1 is an overview map showing the topo in context
- Pages 2 through 5 are the standard USGS topo cut in quarters to fit on standard printers
- Hillshading has been added to each page of the PDF to help visualize the topography

<http://www.natgeomaps.com/trail-maps/pdf-quads>

✓ “Basalt Vesicularity as a Measure of Atmospheric Pressure and Paleoelevation.”

The researchers calculated the ratio between average bubble size in the top and bottom layers of the lava at the base of Mauna Loa and then determined the same ratio for the lava at the volcano’s summit. The difference between the two ratios was significant, and it corresponded roughly to the difference in atmospheric pressure between the summit and base of Mauna Loa. Sahagian and Maus reported their results in Nature magazine in 1994 in an article titled “Basalt Vesicularity as a Measure of Atmospheric Pressure and Paleoelevation.”

✓ ...and another: **Fossil sites - a map-based interface to the Paleobiology Database:**

<http://www.maproomblog.com/2017/03/mapping-fossil-sites/>

The [PDB Navigator](#) is a map-based interface to the [Paleobiology Database](#), which among other things includes the locations of every fossil find. A map of every fossil site seems straightforward enough, but there are hidden depths to this one: you can filter by taxonomy (want to look up the fossil sites for eurypterids or tyrannosaurs? no problem!) or by geologic period, but what’s especially neat is that you can factor in continental drift: when searching by geologic period (the Permian, for example), you can show the continents as they were positioned during that period (see above). [More at Popular Mechanics](#). [\[Leventhal\]](#)

Map located at - <https://paleobiodb.org/navigator/>

✓ ...and: **This phenomenon did have the science community baffled for some time - now we know.**

Article

http://earthsky.org/earth/death-valley-sliding-slithering-sailing-stone-mystery-solved?utm_source=EarthSky+News&utm_campaign=63f6b51470-EarthSky+News&utm_medium=email&utm_term=0_c643945d79-63f6b51470-394714909&mc_cid=63f6b51470&mc_eid=b6de060ded

Make sure you watch the second and complete video explanation

https://youtu.be/MgZ_hlyiKqY

✓ ...and this **How One Brilliant Woman Mapped the Ocean Floor’s Secrets**

http://news.nationalgeographic.com/2017/02/marie-tharp-map-ocean-floor/?utm_source=NatGeocom&utm_medium=Email&utm_content=wild_science_20170311&utm_campaign=Content&utm_rd=17167166

✓ ✓ Upcoming LGGMClub programs include the following:

May: John Rakowski on basic collecting techniques.

✓ ✓ And here is the latest installment of “Bench Tips” by Brad Smith (none received for April).

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Notes from the Editor

Bob Carnein, Editor

ccarnein@gmail.com

719-687-2739



Steve Veatch sent some articles about recent Pebble Pups achievements.

PIKES PEAK PEBBLE PUPS ARE EXHIBITORS AT THE WIPS FOUNDERS SYMPOSIUM AT THE COLORADO SCHOOL OF MINES

By Steven Wade Veatch

Colorado Springs Mineralogical Society Pebble Pup Jamie Weise and Earth Science Scholar Blake Reher, also a member of the Lake George Gem and Mineral Club, were exhibitors at the 10th Western Interior Paleontological Society's Founders Symposium, March 4-5, 2017 at the Green Center on the campus of the Colorado School of Mines. Jamie entered a case that featured a fossil fish he excavated in Wyoming.



Jamie Weise stands in front of his case. This is the first exhibit he has done. Photo by S.W. Veatch.

Blake designed a case that had a variety of fossils he collected or are a part of his collection. Blake's case included a specimen of the carbonized wood found in an igneous rock from Cripple Creek, Colorado.



Blake Reher is a senior Earth-Science Scholar. He is a member of the Lake George Gem & Mineral Club and the Colorado Springs Mineralogical Society. This is the second symposium he has been an exhibitor at. Photo by S.W. Veatch.



View of Blake Reher's case. Each specimen is carefully staged inside the case, along with several props that add interest. Blake included the logos of the two clubs he is a member of to promote their Pebble Pups programs. Photo by S.W. Veatch.

The symposium's theme was the Morrison Formation and its multi-colored sandstones, mudstones and conglomerates that entombed some of the classic dinosaurs of the Jurassic along with the plants and invertebrates that shared their North American home. The next Founders Symposium will be in 2019.

PIKES PEAK PEBBLE PUPS AND EARTH SCIENCE SCHOLAR WINS SCIENCE FAIR AND CATCHES THE EYE OF A MOVIE PRODUCER

By Steven Wade Veatch



Jenna Salvat is seen holding her science-fair awards with Steven Veatch, Pebble Pup and Earth-Science Scholar Director. Photo © by S.K. Veatch.

Jenna Salvat, a member of the Colorado Springs Mineralogical Society's unit of the Pikes Peak Pebble Pups and Earth Science Scholars took home the top prize in the Senior High Physical Science category at the 2017 Pikes Peak Regional Science Fair when she won first place on February 28, 2017. Jenna was presented her award by Dr. Rob Kolstad during the awards ceremony at Library 21C in Colorado Springs amid the cheers of her family, fellow students, and Steven Veatch, Pebble Pup Director. Jenna also received several other awards:

- Armed Forces Communications and Electronics Association
- Arizona State University Walton Sustainability
- Association for Women Geoscientists
- Georgia and Charlie Matteson Award
- I-SWEEP Outstanding Scientist
- NASA Earth System Science Award
- Northrop Grumman Excellence Award
- U.S. Air Force Award
- US Navy Science Award

Jenna was one of 40 students invited to the Colorado Science and Engineering Fair, April 6-8, 2017 at Colorado State University, and she was one of only three students invited to the Intel International Science and Engineering Fair (Intel ISEF). The Intel ISEF will be May 14-19 in Los Angeles.

Jenna's work has caught the eye of Fishbowl Films of Los Angeles, California. The movie company is planning a film about selected teens growing up in the 21st century who create scientific solutions to the most pressing

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issues on the planet through their participation in the largest and most prestigious high school science competition in the world, the Intel International Science and Engineering Fair. The film, by Laura Nix, plans to document the start of Jenna's science fair to the end of her journey as a competitor at the Intel ISEF.

Jenna's award-winning project was on crystalline silicon dioxide and the potential of the generation of voltage through its **pyroelectric** (charge generated when heated or cooled) and **piezoelectric** (charge generated in response to applied mechanical stress) properties.

According to Jenna, "The highest point in the project was watching the electrical signal feedbacks on the oscilloscope as it recorded the electrical fields being induced by mechanical stress and temperature increase." Jenna conducted some of her investigations at one of the laboratories at the Colorado School of Mines. Dr. Katharina Pfaff, a research assistant professor at the Colorado School of Mines, was instrumental in making arrangements for Jenna to use the QEMSCAN lab.

The most difficult part of Jenna's science fair project was locating a facility to conduct her experiments. Jenna plans to continue her research and will need to find a research institution with an interferometer, a lock-in amplifier, and a He-Ne laser for next year. She is also in need of a large-scale autoclave or autoclave reactor with a buffer that allows for two distinct temperature gradients. Jenna said, "My plans for the future are to utilize more precise methods in relation to my experimentation and characterization for next year's portion of this project. I will begin to test a wide variety of materials that are classified as thermovoltaics. I will test these using the proper instrumentation and represent my data mathematically. I will be able to further characterize thermovoltaic materials by calculating their coefficients. I also will pursue the hydrothermal synthesis of alpha-phase silicon dioxide and will learn how to prepare silicon wafers. I plan to develop a small scale thermovoltaic transducer or electromechanical energy system that can be implemented in surface geothermal vents and features, as well as a variety of other applications.



Jenna is in 10th grade at Coronado High School. She is also a volunteer interpretive ranger at the Florissant Fossil Beds National Monument in the summer.

The Pikes Peak Pebble Pups has two units, one that meets in Colorado Springs sponsored by the Colorado Springs Mineralogical Society and the other unit that meets in Lake George and is sponsored by the Lake George Gem and Mineral Club. For further information on the Pebble Pups contact Steven Veatch at this email: steven.veatch@gmail.com.

2018 Membership Application, Lake George Gem & Mineral Club

Box 171, Lake George, Colorado 80827

www.LGGMClub.org

Date: _____/_____/20____

Name(s) _____

Address _____ City _____ State _____ Zip _____

Telephone () _____ - _____ Email (please print) _____
(required to receive newsletter and field-trip info)

Names/ages of family members (if family membership) _____

Dues for Jan 1 through Dec. 31 each year are as follows (please check membership type):

____ Individual (18 and over).....\$15.00

____ Family (includes dependents under age 18).....\$25.00

Dues are due on or before March 31. Members with unpaid dues will be dropped from the roster on April 1.

I agree to abide by the Club constitution, by-laws, and rules regarding field trips and club claim visits.

Signed _____ Date: _____/_____/20____

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

My interest areas include (check all that apply): Minerals____; Fossils____; Lapidary____;
Micromounts____; Colorado geology____; Pebble Pups (ages 7-17)____; Mining History____;
Crystallography____; Other _____

I am willing to give a talk/presentation to (the Club) or (Pebble Pups) on _____
_____and/or lead a field trip to (list)_____

I am willing to participate/help in the following ways (can choose more than one): Club Officer____;
Newsletter Editor/Writer____; Local Show/Show committee____; Nominating Committee____;
Winter Programs Committee____; Field Trips____; Art (badges)____; Membership Coordinator____;
Website Assistance____; Pebble Pups____; Other (be specific)_____

Questions about the Club or Activities? Visit the website or contact a Club officer.

Updated 2016

Lake George Gem and Mineral Club

April, 2017

Lake George Gem & Mineral Club
PO Bo 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 opportunities to learn about Earth science, 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 on 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 10:00AM. From April through October, we meet at 9:00AM, 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 2017 are:

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