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CSMS is an incorporated nonprofit organization with these goals:

- To promote and disseminate knowledge of the earth sciences, especially as they relate to mineralogy, lapidary, and fossils
- To encourage study, collection and fashioning of minerals.
- To accomplish the same through social meetings, lectures, programs, displays, shows, and field trips.
- The Pick & Pack is published monthly to assist and promote the above.

## Dowsing for Minerals?

*We Test the New "Min-Dowzer"*

Russell Stevens

An article in the *Nevada Mining News* recently announced that a group of scientists and graduate students from Ball State University had developed a mineral dowsing device capable of detecting mineral deposits and crystals. The device works on proprietary microwave technology developed by the team from Ball State.

The "Min-Dowzer" consists of two parts: #1—two "wands," held in the hands, with their accompanying power supply, worn on a belt around the waist, and #2—a device that mills small amounts of a mineral into a powder and places the powder in small

capsules to be inserted into the wands.

Here's how it works. Let's say we're looking for quartz crystals. First, a small quartz crystal is placed in the milling device. The crystal is pulverized and enclosed in two capsules that are provided. The capsules are placed into the two "wands." The wands pass a microwave signal through the powder, producing a unique microwave signature for that mineral. This unique signal is amplified and broadcast toward the ground in front of the wands, which are held in the hands of the operator. When a quartz crystal is located, the wands make a beeping sound and point in the direction of the lo-

See *Dowsing* on page 6

## Navajo Sandstone Iron Concretions vs. Martian Blueberries

*Implications for Past Life on the Red Planet*

Andy Weinzapfel, geologist

Back in the early 1980s, I did some brief geologic fieldwork in the Kaiparowits basin of southern Utah. One day, I stumbled on some strange-looking circular and flying-saucer shaped hematitic balls, or concretions, weathering out of the Jurassic Navajo Sandstone (figure 1 on page 4). They were typically pea-sized to 3 inches diameter. Most had a light-colored sandstone core and were surrounded by a very hard, black exterior skin of hematite. Rarely, many concentric rings of hematite were visible throughout a specimen cross section, without a discrete sandstone core. After collecting many of the curiosities, I put them away, and promptly forgot about them for decades.

Fast forward the clock to 1998. The Global Surveyor orbiting Mars is detecting what appeared to be a large area of hematite on Meridiani Planum. This broad plain is

picked as NASA's Opportunity rover landing site because hematite almost always forms in water, and water is associated with life. The rover vehicle then lands on Mars Jan. 25, 2004. It soon detects hematite within gray pebbles dotting the landing site, and such pebbles later are spotted embedded in a rock outcrop. Cornell University scientist Steve Squyres, who heads the Opportunity science team, declares the small spheres looked "like blueberries in a muffin" and might be concretions. The "blueberry" term sticks.

Marjorie Chan, chair and professor of geology and geophysics at the University of Utah, states, "Before Opportunity landed, we thought there might be hematite concretions on Mars. That was based on our study of hematite-rich regions of southern Utah, where hematite balls are found in

See *Iron* on page 4

Drew Malin	President
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Rocky Mt. Federation of Mineralogical Societies (RMFMS)

Colorado Federation of Mineralogical Societies (CFMS)

Colorado Springs  
Mineralogical Society

Founded in 1936



Lazard Cahn

Honorary President

# PICK & PACK

## Our Staff...

Bob Landgraf *Temporary Editor*  
 Bill Cain *Incoming Editor*

Marge Regel *Mailer*

We encourage everyone to submit articles, photos, illustrations or observations.

Share your experiences, trials and tribulations, your new finds, or simply your experience at our last field trip.

The ability to write well is NOT a requirement. We will fix the grammar while keeping the author's voice, style and work intact.

Handwrite it, type it or E-mail it. Format does not matter. All submissions are welcomed.

**DEADLINE** for items to be included in the next month's issue is the fourth Friday of every month. To submit an item, please use the following:

**Photos:**  
 For hardcopy photos, mail to the address below or bring them to the General Assembly Meeting. All photos remain the property of the submitter. All photos will be returned. Electronic photos should be submitted at resolutions above 200 dpi in TIFF or PICT format.

**Articles:**  
 Mail, E-mail, or fax to the address and numbers below. ALL FORMATS ARE WELCOMED.

**E-mail:**  
 CSMSpickANDpack@msn.com

**Address:**  
 1025 East Boulder Street  
 Colorado Springs, CO 80903

**Phone & Fax:**  
 (719) 448-9949  
 For faxes no precalls are required.

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## PRESIDENT'S CORNER

# CSMS Show Just Around the Corner

*Our volunteers are the key to its success*

Drew Malin



As we get another month closer to this year's show, I'd like to thank all of our members who are diligently working on putting this year's show together;

keep up the good work.

A show like ours takes the efforts of our entire club to be successful. Please consider volunteering to help this year. Commitments can be as small as a couple hours or as big as chairing a committee. All efforts are needed and appreciated. Please contact Lorrie Hutchinson to find a spot in which to help.

It also goes without saying that we must

have display cases for exhibits in order to have an interesting and successful show. I'd like to *strongly encourage* all members to make a display for this year's show. I know I sound like a broken record on this subject, but lots of display cases are critical to a successful show.

As I've said before, a case doesn't have to have thousands of dollars worth of mineral specimens. Quite the contrary, educational displays are actually more interesting as they are all very different, and make a nice break from row upon row of specimens.

Just to get you thinking, how about a case on how petrified wood is formed? Or how about one on glacial till and its effect on the rocks we find on the Front Range. Any area that interests one member will probably interest others, so jump in and try a case!



## Relics of Florissant's Ancient Past: Volcanoes, Ash and Fossils

### April's General Assembly

Discover Florissant's remarkable past when volcanoes dominated the landscape and violent eruptions darkened the skies. This presentation begins with the nature of volcanoes, how they are classified, and their place in natural history. This gripping story concludes

with the volcanic setting of Florissant and the role volcanoes played in creating one of the greatest Eocene age plant and insect fossil sites in the world. Join professor Steven Veatch for this incredible journey into the fossil beds' intriguing past.

April 2006 General Assembly  
 Thursday, April 20, 2006, 7:30

Colorado Springs Senior Center  
 1514 North Hancock Blvd.

*April's refreshments courtesy:*

**Lapidary Group**

## Minutes...

*COLORADO SPRINGS  
MINERALOGICAL SOCIETY  
Minutes, General Meeting  
March 16, 2006*

Drew Malin called the meeting to order at 7:35.

### **Treasurer's report**

Show Checking account \$11,000+  
General Checking account \$4,000+  
Scholarship application ready for approval.  
CSMS Auto Tour books for sale.

### **2006 Show Report**

- 2 ½ day show. June 16, 17, and 18. Setup Thursday night. Dealer setup Friday morning.
- Need volunteers. Also people to be in charge of certain areas.
- If you want to build a case, buy a piece of plywood. Hardware and glass is free thanks to Drew's donation. See Roger Pittman if interested.
- Looking for fluorescent mineral cases.
- There will be field trips after the show.
- No Mr. Bones this year, too expensive.
- Adult admission \$5.00. Children \$2.50.
- Banquet Saturday night. Soliciting speakers.

### **Field Trips**

Roger Pittman put together a field trip to the cement quarry on April 15.

### **Old Business**

- Need editor for Pick-n-Pack. Seeking volunteers.

### **New Business**

- Research grant (\$500.00) for Steve Veatch to fund an intern for the summer for the Florissant Fossil Beds. Unanimously passed by members present.
- Mike Wheat nominated as Science Fair Chairman.
- Proposed to raise the dollar amounts for awards for Science Fair. Tabled until it can be presented to the CSMS Board.
- Rocky Mountain Federation show the weekend before the CSMS show in Stillwater, Oklahoma. Looking for entries, especially kids.
- June General Meeting will be on June 8.

The general meeting was adjourned at 8:10 p.m. followed by Ray Berry's "History of CSMS" presentation.

## Upcoming Shows

**April 21-23, Fri. 10-6, Sat. 10-6, Sun. 10-5**

Colorado Mineral & Fossil Show (Spring Show in the Rockies), Holiday Inn, 4849 Bannock St. (I-25 & I-70).

**April 29-30, Sat. 10-6, Sun. 10-5.**

Rocky Mountain Bead Society Bead Bazaar. The Denver Merchandise Mart, Expo Building I-25 at 58<sup>th</sup> Avenue. \$5 admission covers both days.

**May 13-14**

Grand Junction Gem & Mineral Show, Two Rivers Convention Center, theme - Rocks and Minerals of the Colorado Plateau.

**June 9-11**

Rocky Mountain Federation Show, Stillwater, Oklahoma, Payne County Expo Center,

Field Trips – Mon., June 12th will be a trip to Jet, OK, Great Salt Plains, for the hour glass selenite crystals with a continuation west to a site for clear selenite sheet crystals and on to another site for the gypsum "rattle snake eggs."

Tues., June 13th will be a trip to Lake Stanley Draper and the city of Noble, OK areas for rose rocks.

Wed., June 14th will be a trip to a Ralston, OK quarry(s) for fossils. Mainly crinoid stem pieces and other marine shell types.

**June 16-18**

Pikes Peak Gem and Mineral Show, in Colorado Springs, an interesting and educational event, sponsored by the Colorado Springs Mineralogical Society; see <http://www.csms.us/index.htm>

Peter J. Modreski's  
Earth Science Coming  
**EVENTS**

**Thur., Apr. 6, The Weather Makers**, lecture at DMNS by Dr. Tim Flannery, explorer, conservationist, and director of the South Australian Museum. Flannery is the author of the new book, *The Weather Makers*, which received a starred review from *Publisher's Weekly*. In his book, Flannery uses historical fact, scientific data, and his own observations to explain how human influence is gradually overtaking nature's influence on our climate. Flannery offers constructive suggestions for action for both lawmakers and individuals, from investing in renewable power sources like wind, solar, and geothermal energy, to offering an action plan to reduce carbon dioxide emissions by as much as 70 percent. For more information, visit [www.theweathermakers.com](http://www.theweathermakers.com). 7:00 p.m., Ricketson Auditorium, \$12 member, \$15 nonmember. Book sale + signing. I've heard that Tim's book is a "must read." See <http://www.dmns.org/main/en/General/Education/AdultProgram/Lectures/> for more information about this and other current public lecture programs.

**Wed., Apr. 12: China and India's Ravenous Appetite for Natural Resources (and its effect on Colorado)** by Vince Matthews, Colorado State Geologist. 7:00 p.m., Morrison Town Hall, Morrison, CO. Free for the public; a talk in the "Fireside Chat" series of the Friends of Dinosaur Ridge.

**Thur., Apr. 13: The annual Flatirons Mineral Club Silent Auction**, 7:00 p.m. at the West Boulder Senior Center, 9th and Arapahoe in Boulder. Everyone is invited to join the auction and purchase some great rockhounding items. For more information about the auction, please contact Gerry Naugle at 303-591-2830 or check the club's website, [www.bcn.boulder.co.us/community/fmc](http://www.bcn.boulder.co.us/community/fmc). As with the gem and mineral shows, a great opportunity to pick up "neat" specimens.

**Fri.-Sun., Apr. 21-23: "Colorado Mineral and Fossil Show"** held at the Holiday Inn—Denver

*Continued on page 5*

## Iron *Continued from page 1*

national parks and have long been a geological oddity that shows up in many rock shops."

In Utah, the iron concretions have historically been attributed to a wide variety of diverse causes, even extraterrestrial events like meteor impacts. Hopi Indians have a legend that "moqui," or spirits of their ancestors, played games of marbles with the hematite concretions. Although anthropologists currently discourage use of the word "moqui" to be respectful to Native Americans, New Age collectors sell concretions as "moqui marbles" and claim they are endowed with metaphysical powers.

OK, so how did these strange concretions really form? First, let's consider the host unit. The Navajo Sandstone is a massive quartzose cliff former typically 1300-1500 feet thick in south central Utah, generally recognizable by spectacular high angle cross beds (figure 2 on page 5) that erode into interesting and sometimes bizarre land forms. This formation represents an ancient dune field, where windblown sands migrated constantly over a harsh landscape. While the Navajo displays a variety of colors, it appears that the most prolific known accumulations of the concretions occur where the Navajo is white. They are formed in discrete layers, not uniformly distributed throughout the thick unit.

Probably the most accepted current hypothesis involves the flow of saline groundwater saturated with natural gas that bleaches Navajo Sandstone white (nearby Upper Valley field has produced 29 million barrels of oil, ranked the 9<sup>th</sup> largest in Utah in cumulative oil production). Since concretions seem to be concentrated where there are no fractures, joints, or faults in the Navajo Sandstone, large quantities of water seeping rather uniformly through the highly porous and permeable sediments over long periods is suggested. The main water flow likely occurred millions of years after deposition of the Navajo formation. Iron ions mobilized in the groundwater precipitate at the water table where there is a sudden change in chemistry to a more reducing environment. Microbial activity is



**Figure 1** Top row: spherical ironstone concretions. Middle row: "flying saucer" concretions. Bottom row, numbered from left: 1) rare multiple ironstone layers; 2-3) typical sandstone-filled concretion; 4) ironstone shell, sandstone weathered out of concretion; 5-7 odd geometrical shapes.

probably involved at this zone also. A thick, frothy iron scum develops at the water table and, over time, forms the rounded concretions usually having an interior nucleus of sandstone, in a manner not fully understood. Long after formation of the concretions, the Navajo Sandstone erodes. Over millions of years, the hard, more resistant and heavy concretions accumulate in lows as "placers" on the existing land surface (figure 2 on page 5).

Perhaps a similar process could have formed concretions on Mars. One difference between the two is that Martian "blueberries" seem to have a solid core (no sandstone interior). The University of Utah's study suggests the Martian "blueberries" probably formed in groundwater, similar to those concretions of southern Utah. The presence of water would certainly improve the likelihood of life at some time in the Martian past. "On Earth, whenever we find water, we find life — in surface water or underground water, hot water or cold water — any place there is water on Earth there are microbes, there is life," says Bill Parry. "That's the bottom line: hematite is linked to life."

Another interesting theory that is apparently less accepted by the scientific community is not based on typical chemical/mechanical reactions. It draws on the claim that electric arcs in a lab can create tiny spheres that are often hollow. Electric discharge tends to produce spherical layering

*See Iron on page 5*

**Iron** *Continued from page 4*

and a distinct equator and pole, because the electromagnetic force “squeezes” perpendicular to the current that creates it. Some Utah concretions have both equatorial bulges and polar markings. Rock-cutters recommend that you will get a better display if you first locate the equator and poles, then cut across the poles.

of the Grand Canyon in Arizona, without the prior knowledge of the governor of Utah. There was a certain cold reality to this action for our hobby. In an instant, an exceptionally large area of 1.9 million acres became off-limits to mineral collectors, without prior notice.

Do these ironstone concretions occur



**Figure 2** *Tangential cross-bedding within Navajo Sandstone. Note the selective concentration of black ironstone concretions. Many of these are broken and are not specimen quality.*

So the bottom line is there is still controversy about how Martin “blueberries” really formed, and whether Utah’s concretions serve as a reasonable genetic analog. Can we conclusively state from the existence of “blueberries” that life (water) has existed on Mars? No, the jury is still out; but the possible genetic link with Navajo ironstone concretions, likely caused by the presence of major quantities of water, is extremely intriguing.

On the way to the Tucson Gem and Mineral Show this year, my wife and I drove through southern Utah, once again to admire the incredible beauty of this remote place. Recent history has impacted the land in ways I didn’t envision during my 1980s field work. On September 18, 1996, Presidential decree declared much of this area the Grand Staircase-Escalante National Monument. National monuments can be established by presidents, while only Congress can declare a national park. This controversial bill was signed on the south rim

only on the restricted lands? No. It is worth noting that the Navajo Sandstone covers a very large area, extending outside the cluster of National Parks and Monuments in the region where concretions are known from the Moab area (east) to Zion (west). I have found ironstone concretions in legal collecting areas within the Navajo formation, but not in large quantity. Also, the diverse variety of geometric shapes seem fewer than within Grand Staircase-Escalante National Monument.

Due to the removal of traditional collecting areas from the public domain, demand by those of New Age orientation, and the popular link to possible life on Mars, Utah’s concretions will likely go up in value without new discoveries in collectable areas. They were extremely scarce at this year’s Tucson show, noted at only one booth by the author.

**Author’s note:** This article draws liberally from web sites too numerous to mention. The author is a member of the CSMS.

Central, 4849 Bannock St, Denver (on the frontage road west of I-25), 10 a.m.–6 p.m. Friday and Saturday, 10 a.m.–5 p.m. Sunday. Another opportunity to see and buy mineral and related specimens; free admission and parking.

**Sat., Apr. 22 is Earth Day.** For a list of Earth Day environmental and natural science events taking place in your area see the Earth Day Network website, <http://www.earthday.net/> We plan to have two Earth Day natural history/ecology/geology field trips on this weekend: Sat., Apr. 22, a geology hike on South Table Mountain led by retired USGS geologist Harald Drewes; and Sun., Apr. 23, a trip (probably a bicycle ride along the Clear Creek green belt, from Wheat Ridge to Denver) to see and discuss rivers, creeks, water quality and use, floods, wildlife, and geology, led by USGS geologist Pete Modreski. Please contact Harald (303-237-0748) or Pete (303-202-4766) for details or see the Earth Day website.

**Sat., May 6, Dinosaur Discovery Day** (free public tour day) at Dinosaur Ridge, Morrison, Colorado. “DDD’s” will be held monthly, each first Saturday through October. The May 6 day will feature Boy Scout Day at Dinosaur Ridge, with special earth science activities for Scouts. For more information please see [http://www.dinoridge.org/programs/dinosaur\\_discovery\\_day.htm](http://www.dinoridge.org/programs/dinosaur_discovery_day.htm)

**Saturday, April 22, is Earth Day.** USGS will sponsor one or more free public geology/natural history field trips on or about this date; many other groups plan outdoor environmental science activities. For information and a list of public Earth Day activities in any state throughout the U.S., see <http://www.earthday.net/>

**Free USGS Map, Compass, and GPS classes**  
USGS continues to offer these free classes for the public, the 2nd Friday of each month, at the Denver Federal Center, Lakewood CO, Building 810. Mornings (9-11) are Map & Compass, and afternoons (12-4) are GPS. To register please call 303-202-4689, or email [gpsworkshops@usgs.gov](mailto:gpsworkshops@usgs.gov) to reserve a place; bring your GPS unit if you have one.

# Historical Geology

by Bob Landgraf

This past March, I was able to attend a two-day class on invertebrate paleontology sponsored by the Western Interior Paleontological Society in Denver. Jordan Sawdo, a WIPS member, retired professor and geologist and Bryan Cooney, the curator for the Paleo-lab at the Colorado School of Mines, taught the class. We had the luxury of using the Paleo-lab specimens as our teaching examples. I am always interested in the stories that specimens we find today can tell us about the past, in essence, historical geology. In that vein, I have provided part of one of the handouts, which relates a specimen to the environment in which that specimen once lived. For those of you who are interested in the Denver fossil group, I will direct you to their website—[www.wipsppc.com](http://www.wipsppc.com)—where their current newsletter can be found along with information on when and where they meet.

## Fossils as Indicators of Environments

**Land Plants** - Those having well differentiated roots, stems and leaves indicate continental environment, most plant fossils preserved grew in lowland areas.

### Microscopic plants

**Diatoms** – May be either fresh water or marine.

**Calcareous-Algae** – Indicate shallow, well-lighted, clear water, probably marine, may be supertidal – transitional environment.

**Foraminifera** – Marine, larger forms generally indicate shallow, warm water environment, but many types live in deeper, colder water.

**Sponges** – Marine, probably shallow, clear water.

**Corals** – Marine, most indicate shallow, warm, clear, normal salinity (3.5 percent)

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## **Dowsing** *Continued from page 1*

cated crystal. Follow the wands in the direction they indicate until the wands point in toward each other, indicating that the mineral is directly below the wands. A gauge on one of the wands shows the depth below the surface, in inches, of the crystal. All that's left to do is grab a shovel and carefully dig up the crystal!

The "Min-Dowzer" sounded interesting, so I called the university to get a little more information. I spoke with a group representative named Henry "Hash" Browne, who said that they were interested in doing some field testing of an updated version of the "Min-Dowser." I immediately invited Mr. Browne to come to Colorado, and we could try out the device on one of the topaz claims that my partner, Jon Pinball, and I have in the Tarryall Mountains. Hash (Mr. Browne insists on being called "Hash") agreed, and we set up a date in late August of last year.

On August 25th, Hash flew into Denver, rented a car, and met Jon and I at the Fossil Inn in Florissant. After a breakfast of hash browns, we each drove to Lake George and up the Tarryall Road to near one of our claims. We unloaded our collecting gear and helped Hash load his equipment into a backpack for the short hike to the claim.

We decided to use the milling device there at Hash's car, so he wouldn't have to carry it in with him. Jon produced a couple small topaz crystals from his back pocket, and Hash picked one of them. Jon put the other back in his pocket. Hash dropped the crystal into the milling device, and in a few seconds, it produced two capsules with powdered topaz inside. These capsules can be kept and re-used indefinitely. He placed one capsule in each wand and stowed the wands in his pack. As we walked up the trail to the claim, Hash told us stories of his mining days working in Nevada, California, and Namibia, Africa.

We walked to the area we planned to search, and Hash got out his gear. He put on the power supply belt, hooked it up to the wands and turned them on. It took about 15 seconds for the wands to analyze the mineral in the capsules, and Hash was ready to go. Holding a wand in each hand, Hash began to search an area by walking back and forth in a grid pattern. It wasn't long before the wands started beeping and both began pointing in one direction. Hash followed until the wands pointed in toward each other, indicating the mineral was directly beneath them and nine inches below the surface. Jon and I carefully dug down about nine inches, and sure enough, there was a single topaz crystal, about an inch across.

The topaz was loose in the soil, and must have eroded out of a pocket uphill. Hash continued looking uphill, finding topaz after topaz, along with some quartz and feldspar crystals we found while digging up the topaz crystals. About twenty feet above the original topaz discovery, we uncovered the pocket from which the crystals had eroded. Needless to say, Jon and I were amazed.

Jon and I were eager to try the device ourselves, and Hash helped me put the gear on. We decided to walk over to an area that had been unproductive for us in the past. With Jon leading the way, I turned on the wands and followed. I hadn't taken three steps when the wands indicated a target slightly off to my right near where Jon was walking. I told Jon to keep walking the direction he was going, as the wands were pointing that way.

We slowly walked in that direction for probably a full minute, and I was amazed at the distance from which the device could pick up a target. Suddenly Jon let out a series of unprintable expletives, and started hopping around slapping at the back of his pants which seemed to be smoking a little bit, and yelling for me to "turn off the #&! machine." Being unfamiliar with the device, it took a few seconds to turn it off.

By that time, Jon had his now-really-smoking pants down around his knees, and Hash and I were laughing uncontrollably. I poured some water from my water bottle into his pocket and removed that other small topaz crystal that we hadn't used earlier. I also noticed a charred spot on his BVD's with a little pink showing through. I later heard from Jon's wife that he'd been branded by the topaz crystal and the scar clearly showed the crystal's termination faces. Hash said that he had never had anything like that happen before, but that a colleague had discovered that if you dropped a small crystal into a pan of water and turned on the "Min-Dowser," you could poach an egg in less than a minute!

In deference to Jon's ordeal, I gave him the "Min-Dowser," and he used it the rest of the afternoon. We found 22 other single crystals, and three small pockets before we finally packed up for the day! As you might guess, we were impressed. Jon and I found crystals we would never have found without the help of this machine! We walked back to the cars and took off our packs.

I asked Hash how much the "Min-Dowser" cost and where we could buy one. He told me that a St. Louis company had been licensed to produce the device, and that it would be on the market in about six months. The price had not yet been set, but

*See Min-Dowser on page 7*

## Committee Announces Show Details

The show theme is *Everything That Glitters is not Gold*, and the mineral to be featured and judged is pyrite. There will be a banquet on Saturday evening so club members and dealers can attend. John Casto is in charge of the food, and a location and menu will be announced at a later date.

Like previous years, show set up will be Thursday from 4-9 pm. We need volunteers to help skirt tables and run the electrical. Jim Bushnell will be in charge of layout. Dealers will set up Friday beginning at 8am. The show opens Friday and runs from 4pm-8pm on Friday, 10-5 on Saturday and 10-4 on Sunday.

The admission rates are: Adults \$5.00, children 6 -12 and seniors \$2.50, children 5 and under free. There will be coupons in the paper. There will be a field trip on Monday after the show.

Several club members have graciously volunteered to chair committees: Dave Wilson—security; Mike Wheat—security provided by members; Drew Malin—hospitality; Ilona Vogt—Silent Auction. The Kid's Area still needs a chair, but Mary O'Donnell has agreed to assist in this area. Members who would like to volunteer should contact Lorrie Hutchinson, Show Chair, at 382-3503.

## Book Cliffs Field Trip

C SMS has been invited to join the Denver Clubs North Jeffco and RAMS on a field trip to the Book Cliffs area outside of Grand Junction on Mother's Day weekend. This is a traditional field trip in conjunction with the Grand Junction Gem & Mineral Show. I arranged to join North Jeffco back in early March and have not gotten exact details. The following is from a past itinerary. The meeting time may be different dependent upon whether people drive over Saturday morning or Friday night. We will email updates later, or to be certain, please call the trip leaders.

Date: May 13 -14

Days: Saturday and Sunday

Meeting Time: usually 10AM on Saturday, check with leader

Leaders: Ron & Judy Knoshaug

Phone 303-423-2923

Email [jrknoshaug@comcast.net](mailto:jrknoshaug@comcast.net)

### Min-Dowser *Continued from page 6*

he thought it would be in the \$3,000 range. A bargain, if you ask me! I had Hash put us down on the list for one of the first ones available.

Before we left, I asked Hash if he was working on anything new. He replied that they were working on developing actual "X-ray" glasses for the Dept. of Homeland Security. The X-ray technology was developed by department head Prof. Seymore Kleevage. Prof. Kleevage is also the person to contact at Ball State University for any questions

Meeting Place: Super 8 parking lot just south of I-70 on Horizon Drive

Camping: On site, no shade, no water; or alternatively not far from Grand Junction motels

Health Hazards: Snakes, scorpions, sunburn, heat, wind

Land Owner: BLM

Fee or Donation: None

Difficulty: Easy

Vehicle: High clearance, better to have four-wheel-drive, a small shower turns this area to mud and produces deep ruts and washouts. Roads do dry rapidly after a shower. Equipment suggested: Shovel, pick, rock hammer, prybar, chisels, scratcher and container for specimens. Barite crystals should be kept cool and wet so that they don't fracture. Let them gradually dry out at home.

about the "Min-Dowser."

That wraps up this review, except to say that this machine more than lives up to its name! For more info on the "Min-Dowser" use the link below:  
[seymorekleevage@BSuniversity.org](mailto:seymorekleevage@BSuniversity.org).



*Editor's Note: If you are excited about the potential that the above article details, I recommend you reevaluate the article. It is April, after all.*

**Graptolites** – Marine, suggest environments of slow deposition – in black shales they may indicate deep, quiet poorly oxygenated water environment. All of Ord.-Silurian age except dendroid forms.

**Byrozoans** – Marine, suggest shallow, well-oxygenated water.

**Brachiopods** – Marine, most abundant in Paleozoic rocks. Inhabited a great variety of environments, most probably indicate clear water and a firm, stable bottom.

**Bivalvia** – Marine or fresh water, wide variety of environments, most abundant in the Cenozoic. Marine forms much more varied than fresh water.

**Gastropods** – Marine, fresh water, lakes or streams, land. Most fossilized forms marine or fresh water lakes.

**Cephalopods** – Marine, wide variety of environments, floating and swimming forms preserved in variety of sediments.

**Scaphopods** – Marine, shallow to deep water but offshore, soft bottom.

**Trilobites** – Marine, exclusively Paleozoic, occur in variety of fine-grained sediments, generally suggest quiet water and soft, muddy bottom conditions, some were adapted to turbulent water.

**Eurypterids** – Marine, brackish or fresh water, most probably lived in marginal marine or fresh water environments, exclusively Paleozoic age, and most are Silurian.

**Ostracods** – Marine, brackish or fresh water, some suggest shallow, stagnant water, commonly found in fresh water lake deposits.

**Insects** – Mostly terrestrial, rarely well preserved.

**Crinoids** – Marine, shallow or deep well-aerated water, most abundant in Late Paleozoic.

**Echinoids** – Marine, most indicate shallow quiet water conditions.

**Fish** – Marine or fresh water, great variety of aquatic environments.

**Amphibians** – Aquatic fresh water, fossils rare.

**Reptiles** – Many land environments, some aquatic and marine, abundant in Mesozoic.

**Mammals** – Mostly land, diet and habits can be determined by types of teeth and limbs. Mostly Cenozoic.

**Regular meetings of various groups**

**Café Scientifique**, features a talk and discussion on some current science topic; 6:30-8:00 p.m. Tuesday evening once a month (approximately the 3rd Tuesday), at the Wynkoop Brewery (Mercantile Room), corner of 18th & Wynkoop Streets, Denver. No charge, all welcome. <http://cafescolorado.org>

**Colorado Scientific Society**, monthly meetings with one or two speakers on an earth science topic, 3rd Thursday, 7:00 p.m., American Mountaineering Center, 710 10th St. (NE corner with Washington), Golden CO. <http://www.coloscisoc.org/>

**Denver Mining Club**, informal weekly luncheon meetings with a speaker, every Monday, 11:30-1:00, Country Buffet, 8100 West Crestline Avenue, #A3, Littleton, CO (about one-half mile north and east of the intersection of Wadsworth Boulevard & Bowles), tel: 303-933-9923. No charge, but all who attend must purchase a lunch at the restaurant. See website: [http://china-resources.net/den\\_min.html](http://china-resources.net/den_min.html)

**Denver Region Exploration Geologists' Society (DREGS)**, meets monthly on the 2nd Monday, 7:00 p.m., Consolidated Mutual Water Company (lower level), 12700 W. 27th Ave., Lakewood, Colorado; No charge, all are welcome to meetings; see <http://www.dregs.org/>

**Rocky Mountain Association of Geologists (RMAG)** has monthly luncheon meetings with a speaker at the Marriott City Center, California St. between 17th & 18th Streets, 11:30 a.m. Luncheon cost is \$24.00; no reservations are needed for the talk only. See <http://www.rmag.org/>

**USGS Colloquium Series**, lectures on Thursdays, 1:30-2:30 p.m., Foord Lecture Room, Building 20, Denver Federal Center, Lakewood CO. USGS staff, visitors, and guests are welcome. See <http://geology.cr.usgs.gov/crg/colloquia.htm>

**Western Interior Paleontology Society (WIPS)**, meets 7 p.m., first Monday of the month, Sep.-May, Ricketson Auditorium, Denver Museum of Nature and Science, <http://www.wipsppc.com/>

**Western Museum of Mining & Industry Receives Matching Grant**

The private, nonprofit Western Museum of Mining & Industry is proud to announce that they are a recipient of a matching grant of up to \$5,000 from the Pikes Peak Foundation in Colorado Springs.

"The school programs are a huge success for us at WMMI. Through this grant from the Pikes Peak Foundation, we can continue teaching over 8,000 students along the Front Range," said David Carroll, Executive Director of the Western Museum of Mining and Industry.

The matching grant fundraiser will continue throughout 2006. Anyone wishing to donate to the fund is encouraged to call 719-488-0880, or stop by the Western Museum of Mining & Industry between 9 - 4, Monday-Saturday.

To learn more about the Western Museum of Mining & Industry, please join us for a tour at 10:00 a.m. or 1:00 p.m., Monday-Saturday. We offer special programs and discounts for larger groups. Check out our website for all the latest information at [www.wmmi.org](http://www.wmmi.org).

About the Western Museum of Mining & Industry: The Western Museum of Mining & Industry is a private, nonprofit museum founded in 1970. We educate over 8,000 school children a year on the importance of mining in the American west. We are located at 225 North Gate Blvd., which is easily accessible from I-25 (Glendale exit #156A). The telephone number is 719-488-0880, and our web address is [www.wmmi.org](http://www.wmmi.org).

<p><b>DICK'S ROCK SHOP</b> (719) 390-7788</p> <p><b>CABS</b> Lapidary Equipment</p> <p><b>SLABS</b> Silversmithing Supplies</p>  <p>7310 South Hwy. 85/87 Fountain, Colorado 80817 Diana Wing Celebrating our 25th Year</p>	<p><b>KRYSTALS</b></p> <p>Gems Minerals Jewelry Crystal Skulls by Appt. Only <b>719-531-7203</b></p> <p>Joe &amp; Marylee Swanson Colorado Springs, CO <a href="mailto:Krystals@webtv.net">Krystals@webtv.net</a></p>
<p>(719) 633-1153</p> <p><i>Ackley's</i> <b>Rocks &amp; Stamps</b></p> <p>RHONDA JO HART ART &amp; HELENA ACKLEY OWNERS</p> <p>3230 NORTH STONE AVE. COLORADO SPRINGS, CO 80907</p>	<p>Minerals Fossils Artifacts Books Beads Custom Jewelry &amp; Repair Rough Turquoise</p> <p><b>Claim Jumper's Rock Shop</b> Boyde Astemborski, Owner (in the penny arcade)</p> <p>14 ARCADE (719) 685-5136</p>
<p><b>GRAND INCLUSIONS</b> <b>ROCK SHOP</b></p> <p>• MINERALS • ANTIQUE BOTTLES • ARTIFACTS • CRAFTS</p> <p><b>RANDY STAPLETON</b> 719-347-2195</p> <p>2306 E. PLATTE SAT, ONLY 10-5</p>	<p><b>Steve &amp; Peggy Willman - Minerals</b> <b>Sangre de Cristo Gallery</b></p> <p>114 Main Street, Westcliffe, CO 81252 email: <a href="mailto:gallery@ris.net">gallery@ris.net</a> 719-783-9459 Fall Hours: Friday &amp; Saturday 10:00 to 5:00</p> <p>Collectable minerals, fossils, crafts &amp; local artists</p>

# First Field Trip of the Year!

## Holcim Cement Quarry

Arrangements have been made for a field trip to the Holcim Cement Quarry on Saturday, April 15th, 2006 from 9:00 a.m. until 12:00 noon.

We will meet at the Quarry Office! Collecting at Holcim can be as easy as walking around and picking up the pyrite balls to as difficult as sawing sharks' teeth out of the solid rock. Some people bring sledge hammers to break up boulders. Bring collecting bucket, rock hammer, water, food, sunscreen, etc. Have your RMFMS field trip release (on reverse side of page) signed and with you to turn in to the quarry foreman.

**Hard hats, safety glasses, and safety shoes—steel or approved fiber toes—required!** No tennis shoes, shorts or pets. Children are welcome as long as they wear steel-toed shoes, hard hats, and safety glasses just like everyone else. They must be accompanied by a parent or guardian at all times! This is an active mine; you must stay in the area they assign us. **Everyone must leave at noon.**

### Directions

This takes about an hour! From Colorado Springs: Take Hwy 115 – Nevada Ave. (exit 140B off S. bound I-25) south about 45 miles through Penrose, CO (last potty stop) across Hwy 50 across the Arkansas River. When 115 veers right towards Florence, CO you need to turn left (east) on Hwy 120, cross the green bridge, go past the plant, cross the concrete bridge. Turn left! Stop by the sign that says “drive on left beyond this point.” We'll gather here, then at 8:50 am we'll go in to the quarry office, sign releases, get instructions, etc.

**Any Questions????? Contact field trip leader Roger Pittman, 719-684-6286 (cell) [prpittman@netzero.net](mailto:prpittman@netzero.net)**

**Editor's note: Walmart does carry inexpensive steel toed shoes, as does K-Mart and several others.**



**The Colorado Springs Mineralogical Society**  
*"All That Glitters Is Not Gold"*  
**Rocky Mountain Federation of Mineralogical Societies Convention & Show**  
**Phil Long Expo Center, Colorado Springs, Colorado**

**JUNE 16, 17 & 18, 2006**

**REQUEST FOR NON-COMPETITIVE DISPLAY SPACE**

NAME:	SOCIETY:		
ADDRESS:			
City:	State:	Zip:	

Exhibitors are urged to bring their own cases. A limited number of club cases are available upon request. Exhibitors using club cases will need to furnish any risers, linings, extension cords or accessories as needed. **EACH CASE WILL BE LIMITED TO 120 WATTS.**

---

**NON-COMPETITIVE EXHIBIT**

Describe display			
	I will bring my own case.	Case Length:	
	I will need a case*	Approximate Case Length:*	
*CSMS cases are 36" X 24" outside measurements			

Signature of Non-Competitive Exhibitor \_\_\_\_\_

With the signing of this request it is mutually agreed that the Colorado Springs Mineralogical Society, the Rocky Mountain Federation and Phil Long Expo Center shall not be liable to any exhibitor for damage, loss or destruction of any exhibit or injury to his person for any cause and all claims for injury are expressly waived by the exhibitor.

**DEADLINE: May 15, 2006**  
**Applications will be accepted**  
**on a space-available basis after 5/15.**

**RETURN TO: Lorrie Hutchinson**  
**10915 Grassland Rd.**  
**Colorado Springs, CO 80925**

PLEASE USE ONE FORM FOR EACH ENTRY. FORM MAY BE REPRODUCED.

**The Colorado Springs Mineralogical Society**  
**"All That Glitters Is Not Gold"**  
**Phil Long Expo Center, Colorado Springs, Colorado**

**JUNE 16, 17 & 18, 2006**

**REQUEST FOR COMPETITIVE DISPLAY SPACE**

NAME:	SOCIETY:		
ADDRESS:			
City:	State:	Zip:	

Exhibitors are urged to bring their own cases. A limited number of club cases are available upon request. Exhibitors using club cases will need to furnish any risers, linings, extension cords or accessories as needed. **EACH CASE WILL BE LIMITED TO 120 WATTS.**

**COMPETITIVE EXHIBIT**

Describe display:			
	I will bring my own case.	Case Length:	
	I will need a case.*	Approximate Case Length:*	
*CSMS cases are 36" X 24" outside measurements			

DIVISION \_\_\_\_\_ CLASS \_\_\_\_\_ MASTER    ADVANCED    JUNIOR    SOCIETY  
 (Circle one of above.)

I hereby certify that this exhibitor is a member in good standing of the RMFMS.  
 Signature of Society Officer \_\_\_\_\_

Set up is Thursday, 4 p.m. until 9 p.m.; judging will begin at 9 a.m. Saturday.  
 Judge/Exhibitor conferences 11 a.m. Saturday.

Signature of Competitive Exhibitor \_\_\_\_\_

With the signing of this request it is mutually agreed that the Colorado Springs Mineralogical Society, the Rocky Mountain Federation and Phil Long Expo Center shall not be liable to any exhibitor for damage, loss or destruction of any exhibit or injury to his person for any cause, and all claims for injury are expressly waived by the exhibitor.

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PLEASE USE ONE FORM FOR EACH ENTRY. FORM MAY BE REPRODUCED.

**Board Meeting:** 1st Wednesday @ 7:00**Drew Malin: 531-7594**

Same place. Same Date &amp; Time

**Camera Club:** 4th Tuesday @ 7:15

1514 North Hancock, C/S

**Roger Pittman: 683-2603**

The CSMS Camera Club meets on the Fourth Tuesday of each month at 7:30 at the Senior Center 1514 N. Hancock. The Competition subject for April is "Rocks that Look like a Critter." We are working on a program tentatively titled "Dinosaurs in the Shadow of Pikes Peak." A Power Point version is available from Roger Pittman if anyone is interested in critiquing the work of a bunch of crystal collectors.

**Crystal Study Group:** 2nd Friday @ 7:30

1514 North Hancock, C/S

**Kerry Burroughs: 634-4576**

The crystal group meets the second Friday of the Month at the Senior Center, 1514 North Hancock in the Ceramics room (off to the right when you enter). The presentation will be minerals of the San Juan Mountains by Ray Berry.

**Jewelry Group:** 3rd Saturday @ Noon-4:00

6608 Gambol Quail Drive East, C/S

**Rick Copeland: 594-6293**

The Jewelry group will meet April 15, 2006 at Rick Copeland's, 6608 Gambol Quail Dr E, at noon.

**Fossil Study Group:** 4th Wednesday@7:30 **John Harrington: 599-0989**

The April Fossil Meeting will be at Naoko & Bob Murphy's, 4130 Scotch Pine Drive in Briargate, at 7:30 on the 26th, 4th Wednesday. John will do a slide program on things he's picked up over the years.

**Lapidary Group:** 1st Saturday @ Noon

3085 Rhapsody Drive, C/S

**Drew Malin: 531-7594****Micromounts:** 2nd Tuesday @ 7:00

1514 North Hancock, C/S

**Phil McCollum acc@frii.com****Moyra Lyne: 442-2673****Faceting Group:** 4th Monday @ 7:00**Dave Wilson: 635-7891**

President	Drew Malin	531-7594	advanceone@adelphia.net
Vice President	Linda Laverty	520-5939	chilipepper24@juno.com
Secretary	Rick Copeland	594-6293	rick.copeland@covad.net
Treasurer	James Bushnell	598-9262	bushy@pyramidpeak.com
Membership Secretary	vacant		
Managing Editor-to-be	Bill Cain	634-8205	bcain2@earthlink.net
Member-at-Large	Louis Severini	687-9491	
Member-at-Large	John White	630-0300	bluski2222@msn.com
Member-at-Large	John Casto	329-0912	Jcasto@UCCS.edu
Member-at-Large	Brent Williams	632-3552	zaphod1863@yahoo.com
Past President	Robert Landgraf	687-3195	RMLWP74@aol.com
Show Chairperson	Lorrie Hutchinson	382-3503	forlorrie_h@yahoo.com
Field Trip Director	Ethan Bronner	448-9949	ethanbronner@msn.com
Librarian	Mary O'Donnell	689-7209	mod4185@compuserve.com
Camera Club	Roger Pittman	683-2603	rpittman@netzero.com
Crystal Study	Kerry Burroughs	634-4576	kburroug@adelphia.net
Faceting Group	Dave Wilson	635-7891	dlwilson@pcisys.net
Fossil Group	John Harrington	599-0989	harrington1@mindspring.com
Lapidary Group	Drew Malin	531-7594	advanceone@adelphia.net
Micromount	Phil McCollum		acc@frii.com
Jewelry	Rick Copeland	332-7915	rick.copeland@covad.net

# Events

- 1 **Apr - Saturday, noon**  
Lapidary Group
- 5 **Apr - Wednesday, 7:00**  
Board Meeting
- 11 **Apr - Tuesday, 5:00**  
Micromounts Group
- 14 **Apr - Friday, 7:30**  
Crystal Group
- 15 **Apr - Saturday, noon**  
Jewelry Group
- 20 **Apr- Thursday, 7:30**  
General Assembly
- 24 **Apr - Monday, 7:00**  
Faceting Group
- 25 **Apr - Tuesday, 7:15**  
Camera Club
- 26 **Apr - Wednesday, 7:30**  
Fossil Group
- 3 **May - Wednesday, 7:00**  
Board Meeting
- 6 **May - Saturday, noon**  
Lapidary Group
- 9 **May - Tuesday, 5:00**  
Micromounts Group
- 12 **May - Friday, 7:30**  
Crystal Group
- 18 **May - Thursday, 7:30**  
General Assembly
- 20 **May - Saturday, noon**  
Jewelry Group
- 22 **May - Monday, 7:00**  
Faceting Group
- 23 **May - Tuesday, 7:15**  
Camera Club
- 24 **May - Wednesday, 7:30**  
Fossil Group

Bob Langraf, Temporary Editor



P.O. Box 2  
Colorado Springs, CO 80901-0002

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## **Joining the Colorado Springs Mineralogical Society (CSMS)**

General Assembly meetings are the third (3rd) Thursday of each month, except August, 7:30 p.m. at the Colorado Springs Senior Center, 1514 North Hancock Blvd., Colorado Springs, CO. **Visitors are always welcome.**

CSMS also offers Satellite Group meetings that allow more focused attention in specific areas of our members' interests. Our current Satellite Groups consist of the following: Camera Club, Crystal Study Group, Faceting Group, Fossil Study Group, Lapidary Group, Jewelry Group. For details of Satellite Group meetings, see page 9.

Yearly Dues include the 10 issues of the **PICK & PACK**, all field trips (additional fees may be required on some field trips and members are responsible for all transportation to and from), participation in all Satellite Groups (some groups may request additional fees to help cover resource costs), free admission to the *Western Museum of Mining and Industry*, a year of learning and enjoyment, plus a lifetime of memories.    Individuals - \$15.00    Family - \$25.00    Juniors - \$2.00

If you are interested in joining the CSMS or would like more information, we encourage you to attend our next General Assembly meeting (see page 2 for details of the next meeting) or visit our website: [www.csms.us](http://www.csms.us)