



*Wickenburg Gem & Mineral Society, Inc.*

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[www.wickenburggms.org](http://www.wickenburggms.org)

*The purpose of this organization shall be to educate and to provide fellowship for people interested in rocks and minerals; to foster love and appreciation of minerals, rocks, gems, and the Earth.*



**Come One, Come All,  
Let's Deck the Halls !!!**

## **CLUB CHRISTMAS PARTY**

**Ho Ho Ho Ho Ho Ho**

**Fri, Dec 4, 2015**

**At 5:30 pm**

**POTLUCK and WHITE  
ELEPHANT GIFT EXCHANGE**



The club will supply ham, turkey, plates,  
napkins, and plasticware.



Club members bring a side dish and/or dessert.



Delve into the darkest recesses of your  
closets, and find a grotesque, obscene, funny  
or 'ugly' thing, and re-gift it! Disguise it well,  
and watch fellow members compete for it — much to  
your amusement!



### Meeting Minutes — November 13, 2015

Beginning at 5 pm, Joyce Ramage taught a class on making bracelets with copper wire and beads. This was followed with a cookout and pot luck.

There were approximately 30 in attendance, including three guests.

Craig gave a report on Dave Perry's passing this summer and Bob Bartlett having terminal cancer.

The minutes and treasurer's report were read and approved.

Craig thanked Joyce for teaching the class.

Jim Koning discussed the classes that will be offered to members at his shop in Wickenburg. Classes will consist of cabochon, rock polishing, and silversmithing. Classes will be more than one day, will cost \$65 per person, and will be taught by Jim Jacobs and Jim Koning.

Old/New Business: We need volunteers!!!!

Wednesday, November 25 at 9am, to load equipment from the storage unit

Thanks to Jason Munger for getting show signs made up and donating them

Roma and Harriet will be running the food court

Rock identification has been taken care of Best Rock table

Friday morning November 27 at 7am will be setup for the show

Sunday afternoon November 28 at 4pm will be start of takedown

Beth thanked Dale and Debbie for all of the preliminary work they have done

Karen Coulter reported on raffle tickets already sold for the gold nugget. Raffle tickets are six for \$5.00 or \$1.00 each

Election of new officers will be December 4. All offices except treasurer are open. The meeting will start at 5:30pm with a pot luck Christmas dinner, followed by a White Elephant gift exchange.

Continued.....

Steve Hill will ask the scholarship recipient to come to the next meeting. His scholarship is being held until next semester, so as not to interfere with the grant he has received.

Field Trips: Some suggestions were Sheep Creek for sagenite, Date Creek for quartz crystals. Jason will take the lead Thursday, November 19 at 9 am to go to Lake Pleasant for calcite crystals. Meet at Morristown P.O..

Show and Tell: Prize won by Allison Arnold  
Door Prizes: Steve Hill and Sharlene Rodbom

Respectfully submitted,  
Susan Jones

## ELECTIONS in DECEMBER

The club will be conducting elections for officers at the December meeting, after the potluck. Consider running for office. President, Vice President, Secretary & Treasurer.

If you'd like to nominate yourself or other member, contact an officer.

### NOTES FROM THE EDITOR

Have a geological interest? Been somewhere interesting? Have pictures from a club trip? Collected some great material? Write a short story (pictures would be great). I'd like topic suggestions also.

Deadline for the newsletter is the end of the month.

Mail or Email submissions to:  
Susan Celestian, editor  
6415 N 183rd Av  
Waddell, AZ 85355  
azrocklady@gmail.com

<http://www.wickenburggms.org/>

If you ever have photos from a club field trip, send a couple to Dale, for posting on the website.



### SIX CREATIVE DIVAS LED BY COPPER MAESTRA, JOYCE RAMAGE

Starting before the formal November meeting, Joyce Ramage ably instructed six club members, in the making of link bracelet. The copper wire used was mined, smelted, and pulled by Joyce and her partner, Gary Huetson, at the Reserve Bank Mine. Thank you Joyce!

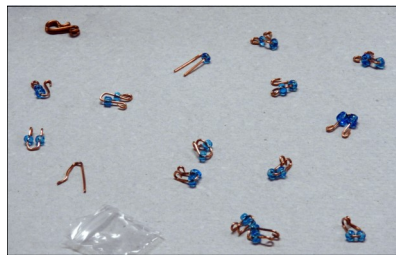
Following the bracelet-making session, there was a potluck, with burgers and dogs provided by the club — YUM!



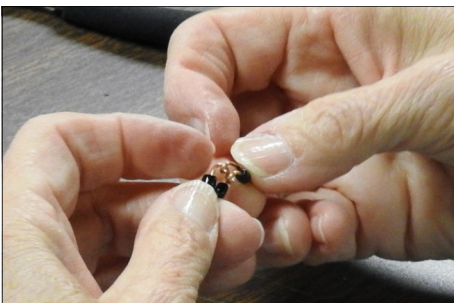
1 - Loading beads onto the links.



2 - Bending ends of links.



3 - Links ready to be 'linked'.



4 - Hooking links together.



6 - Almost done.



5 - Closing link connections.



7 - Finishing touch!



Master Chef Marty Hagan chars — I mean grills-to-perfection — the hot dogs and hamburgers. Thanks Marty!!!

# Lake Pleasant Calcite Field Trip on Thursday, November 19, 2015

Jason Munger led a trip out Cow Springs Road north of Lake Pleasant. The area is criss-crossed with calcite veins, and many areas are littered with frosted calcite crystals and cleavage rhombs. 21 club members came out for a pleasant day in the great outdoors! *Photos by Sue and Stan Celestian*



A beautiful morning around Lake Pleasant.



4WD's all-in-row.



Calcite veins crisscross the road, and the countryside! Crystals and cleavage rhombs litter the ground (look for the yellow arrows, in the picture to the right).





Wander around out there, and see all sorts of sights — even a barrel cactus growing out of a mass of calcite.



A big chunk of cleavable calcite lies in wait, in the photo on the top left. And in the bottom left, some banded travertine (calcite) can be seen.



An ATV, 2 horses—with cowpokes astride, a couple of dogs (or three) — and a cattle roundup comes down the road!

# HELP RE-ESTABLISH THE ARIZONA MINING AND MINERAL MUSEUM

Our club used to support the education program of the defunct Arizona Mining and Mineral Museum. A new website has been created to help keep people informed about efforts to re-establish the Museum. As most of you know, on the eve of Arizona's centennial celebration, Governor Brewer and the legislature eliminated the Department of Mines and Mineral Resources, and moved curatorial responsibility, for the Museum, to the Arizona Historical Society (AHS). AHS promptly closed the doors to the museum, putting an end to the mineral/mining education programs, and denying many thousands of Arizona school children a wonderful field trip opportunity, and a very personal museum experience to thousands more in the general public.

During last year's legislative session, a bill, that would have re-established the Museum, passed both houses — only to be vetoed by Governor Ducey. However, a cadre of people are continuing efforts through CAMMAZ (Coalition of Advocates for Mineral Museums in Arizona). I encourage you to go to the website below and register your email. It will only be used to occasionally let you know the status of the effort, and to notify you of opportunities to "lobby" your legislators. There are no dues, no contributions will be solicited, your email will not be shared or sold — ever.

*And soon there will be contest to win an Estwing rock hammer (and perhaps other items).  
Look for it on the website — and share any memories you might have about the Museum.*

**[WWW.CAMMAZ.NET](http://WWW.CAMMAZ.NET)**

In addition, Dick Zimmerman (who has been spearheading the effort to effect the return of the Museum) has been posting to his blog, since the doors were closed. It is a great source for the history of this whole sad saga. [minmumad.blogspot.com](http://minmumad.blogspot.com)



## INTRUSIVE IGNEOUS ROCKS DIORITE IN ARIZONA

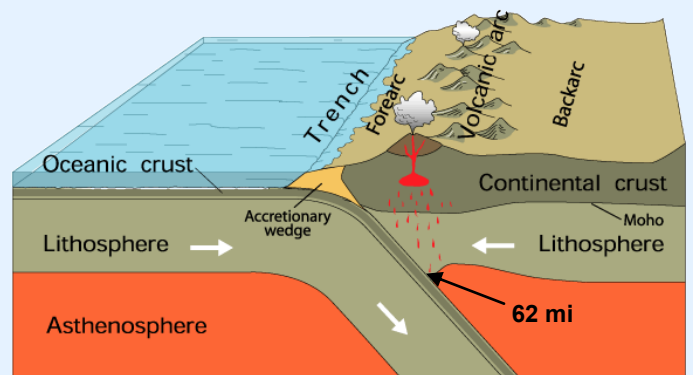
Intrusive (or Plutonic) - form at depth, beneath Earth's surface

To review — intrusive igneous rocks cool very slowly, giving atoms enough time to link up, and build visible crystals. These rocks will be coarse-grained — comprised of interlocking crystals of various minerals. This month we will look at diorite.

Diorite is the relative uncommon compositional equivalent of andesite (See Figure 1); however, it is coarse-grained. It is very similar to granite (discussed in October's newsletter), except there are no visible crystals of quartz, and the feldspar component is largely sodium-rich plagioclase. Other minerals that may be present are amphiboles (such as hornblende), pyroxene, and biotite.

There are about equal parts light-colored and dark-colored minerals, giving diorite a "salt and pepper" look. So a black and white igneous rock, with no visible quartz, can be visually identified as diorite.

As with granite, most diorite forms in convergent zones, where two tectonic plates collide. Magma resulting from the partial melting of oceanic crust, rises through the granitic rock of the continental crust, incorporates some of that into the original magma, thus changing its composition to the more intermediate composition of diorite. Should this magma explode out of the Earth's surface, it would form andesitic continental arc or island arc volcanoes. Of course, diorite forms as that magma cools far below the Earth's surface, forming batholiths, dikes, and sills. See Figure 2.



**FIGURE 2 Oceanic-Continental Convergence** Where an oceanic plate collides with a continental plate, the oceanic plate with subduct. *Graphic courtesy of the USGS*

	Light color	Intermediate	Dark color
Fine-grained; extrusive	<b>RHYOLITE</b> *white, lt gray, pinks * very viscous lava * stratovolcanoes; domes	<b>ANDESITE</b> *med-dk gray * very viscous lava * stratovolcanoes	<b>BASALT</b> *black, dk gray, rust red  * very fluid lava * shield volcanoes
Coarse-grained; extrusive	<b>GRANITE</b> *grays, pinks, (red) * visible quartz *K-feldspar, muscovite, biotite, hornblende	<b>DIORITE</b> *salt and pepper * no visible quartz *plagioclase, K-feldspar, hornblende, biotite	<b>GABBRO</b> *black * no visible, often visible olivine *plagioclase, pyroxene
	<b>OBSIDIAN</b> →*glassy, black, rust-red, greenish,		
	<b>PUMICE</b> →*glassy froth: white, yellow, brown, black		
	Decreasing % Silica →		
	Increasing % Iron and Magnesium →		

**FIGURE 1 Igneous Rock Chart**, showing the relative compositions and relationships of the igneous rocks.  
*Table by Susan Celestian*

Diorite textures and compositions, can vary. What all diorites have in common are:

- ◆ Basic components of light-colored sodium-rich plagioclase and dark-colored amphiboles/pyroxenes or biotite
- ◆ Coarse-grained
- ◆ Typically medium-dark gray; salt and pepper

Figures 3-5 illustrate some diorites — unfortunately none are from Arizona.

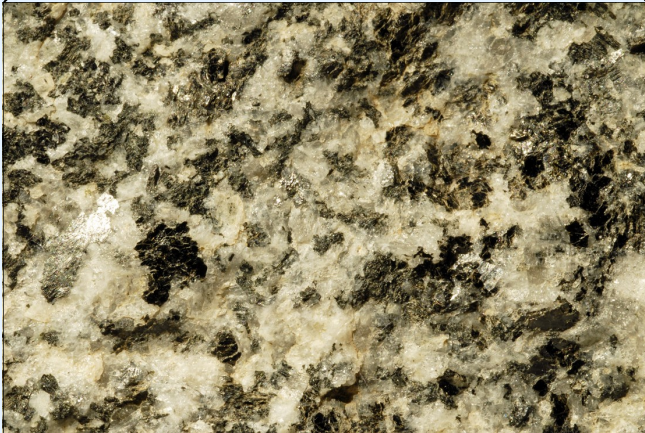
*Diorite continued on page 5.....*

For a look at a spectacular orbicular diorite that occurs in Finland, go to

[http://www.kristallin.de/orbiculite/orbicular\\_rocks1.htm](http://www.kristallin.de/orbiculite/orbicular_rocks1.htm)

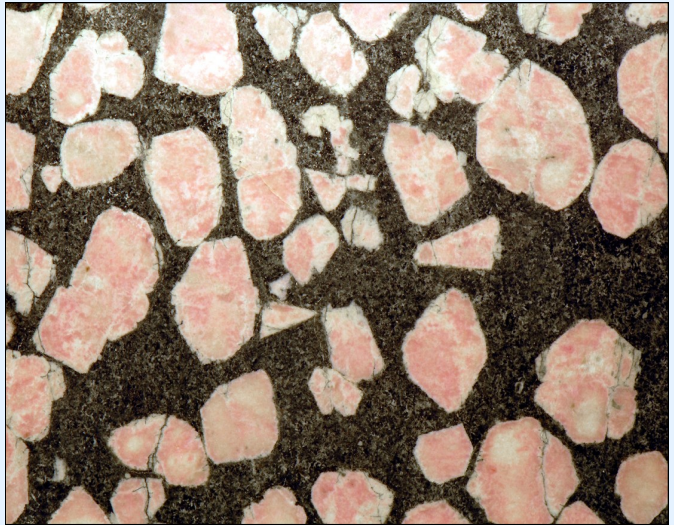
<http://fineartamerica.com/featured/orbicular-diorite-rock-dirk-wiersma.html>

..... Diorite continued from page 4



**FIGURE 3 DIORITE** This classically “salt and pepper” rock is a diorite, from a batholithic intrusion exposed along I-8, in California (close to Arizona). If you enlarge the image on your monitor, it becomes very clear that the black crystals are biotite, and there are no glassy grains of quartz.

*Photos by Stan Celestian*



**FIGURE 4 PORPHYRITIC DIORITE** The big pink feldspar crystals make this Australian rock an attractive lapidary material, nicknamed Pink Marshmallow Stone. *Photo by Stan Celestian*



**FIGURE 6 ORBICULAR DIORITE** This California oddity is on display in front of the USGS building in Menlo Park, CA.. Photo posted by Volcanoguy on [http://www.waymarking.com/waymarks/WMADH0\\_Orbicular\\_Diorite\\_Menlo\\_Park\\_California](http://www.waymarking.com/waymarks/WMADH0_Orbicular_Diorite_Menlo_Park_California)

**FIGURE 4 ALMANDINE in DIORITE** Garnets up to 3 feet in diameter polka-dot the diorite in the garnet mines around Gore Mountain, NY. The garnet was mined as an abrasive, from the late 1800s to the 1980s. In 1969, this garnet was named the New York State Gemstone.

*Photo by Stan Celestian*



## UPCOMING AZ MINERAL SHOWS

**January 8-10 - Mesa, AZ** Flagg Gem and Mineral Show, Mesa Community College, Dobson Rd, just north of Rte 60; Fri-Sun 9-5; Admission/Parking free. See flyer on page 10.

**January 8 - February 28 - Quartzsite, AZ** Desert Gardens Rock, Gem and Mineral Show; Desert Gardens Show Grounds, Admission/Parking: free. <http://www.xpopress.com/quartzsite-shows-swapmeets-schedule.html>

**January 20-24 - Quartzsite, AZ** QIA Pow Wow Gem & Mineral Show, Admission/Parking: free. <http://www.xpopress.com/quartzsite-shows-swapmeets-schedule.html>

**January 1-10 - Quartzsite, AZ** Tyson Wells Rock & Gem Show, Tyson Wells Show Grounds, Admission/Parking: free <http://www.xpopress.com/quartzsite-shows-swapmeets-schedule.html>

**January 29 - February 14 - Tucson, AZ** Tucson Gem & Mineral Showcase; 43 different gem, mineral, fossil, bead & jewelry shows - nearly 4000 vendors. <http://www.xpopress.com/tucson-gem-mineral-fossil-jewelry-shows-schedule.html>

**February 11-14 - Tucson, AZ** Tucson Gem & Mineral Show, Tucson Convention Center, 260 S Church Ave; Thur-Sat 10-6, Sun 10-5; Admission fee.

If you are travelling, a good source for out-of-state (or in-state) gem and mineral shows AND clubs is

**February 20-21 - Apache Junction, AZ** 50th Annual Jewelry, Gem and Rock Show, Skyline HS Gym, 845 Crimson Rd; Sat 9-5, Sun 10-4; Admission adults \$3, students \$1, children free.

**March 12-13 - Anthem, AZ** Daisy Mt. Club Show and Sale, Boulder Creek HS, 40404 N. Galvin Peak Parkway; Sat 9-5, Sun 9-4; Admission adults/seniors \$2, children free.

<http://www.the-vug.com/vug/vugshows.html> or <http://www.rockngem.com/ShowDatesFiles/ShowDatesDisplayAll.php?ShowState=AZ>

For out-of-the-country shows:

<http://www.mindat.org/eventlist.php>

A good source for a list of Arizona Mineral Clubs and contact information is

[http://whitemountain-azrockclub.org/Public\\_AZ\\_Clubs\\_Links.html](http://whitemountain-azrockclub.org/Public_AZ_Clubs_Links.html)

## UPCOMING WGMS FIELD TRIPS

NO FIELD TRIPS ARE SCHEDULED, DUE TO SUMMER BREAK

DATES SUBJECT TO CHANGE

**CONSIDER VOLUNTEERING TO PLAN OR HELP PLAN TRIPS. YOU WOULD NOT NEED TO LEAD EVERY TRIP, BUT KEEP THINGS ON TRACK.**

If you all have some place that you would like to go, let Bob Bartlett [623-388-0749](tel:623-388-0749), Marty Hagan [602-469-7770](tel:602-469-7770), or Craig Jones [208-681-4770](tel:208-681-4770) know. We have some dates to fill in. This is your club. Let's go out and have some fun.

**Check the website for field trip announcements, especially if you don't have email!**

## Officers and Chairpersons

**President:** Craig Jones .....208-523-9355  
**Vice President:** Martin Hagan ..... 602-469-7770  
**Secretary:** Sue Jones ..... 208-523-9355  
**Treasurer:** Debra Keiser ..... 928-684-1013  
**Program Director:** Dale Keiser ..... 928-684-1013  
**Publicity:** currently open position  
**Membership:** Roma Hagan ..... 602-469-7662  
**Editor:** Susan Celestian ..... 602-361-0739  
**Field Trip:** Craig Jones, Bob Bartlett, Marty Hagan  
**Show Chair:** Beth Myerson ..... 480-540-2318  
**Scholarship Chair:** Steve Hill ..... 928-533-3825  
**Historian:** Jeanine Brown ..... 928-684-0489

Meetings are held the **2nd Friday** most months at **Coffinger Park banquet room**. Potluck dessert at 6:30 pm. Business meeting at 7:00 pm. **Exceptions: February and December** meetings are held on the **first Friday of the month**. We do not meet in the summer — **no meetings in June, July or August**.

**Membership Dues: \$15.00 Adults per Person**  
**\$ 5.00 Juniors and Students**

### Meeting Dates for 2015/2016

**Wickenburg:** Jan 9, Feb 6, Mar 13, Apr 10, May 8, Sept 11, Oct 9, Nov 13, Dec 4, Jan 8, Feb 5, Mar 11, Apr 8, May 13

**Stanton meets** Thursday after the Wickenburg meetings. Apr 16, May 14, Sept 17, Oct 15, Nov 19, Dec 10, Jan 14, Feb 11, Mar 17, Apr 14, May 19 (subject to change)

## MINERALS IN OUR EVERYDAY LIVES

### USES OF DIORITE

Diorite has been a popular stone for thousands of years. It is locally abundant, attractive, very hard, and durable.

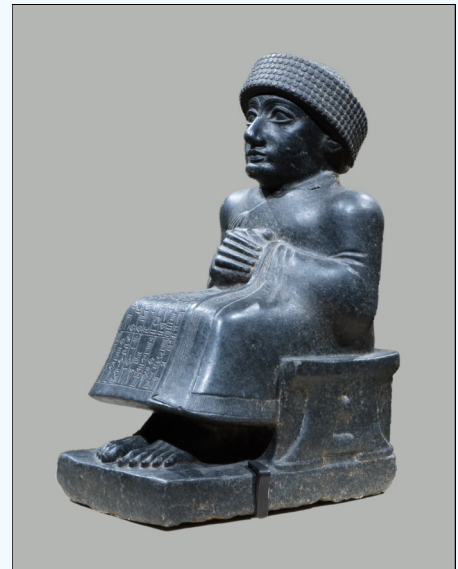
- ◆ Building stone (from the time of Egyptian pyramids to today) It was deemed quite valuable in ancient times. In fact, the Empire of Sargon of Akkad "listed the taking of diorite as a purpose of military expeditions" (*Wikipedia*).



Axehead found in the U.S.  
Photo posted by *gleaner1* on  
[www.treasurenet.com](http://www.treasurenet.com), July 4, 2009

- ◆ Weaponry (axe heads, for example) of Incans and Mayans
  - ◆ Building facing stone
  - ◆ Cobblestones
  - ◆ Architectural trim
  - ◆ Sculpture, although it is tough to carve. In fact, Ancient Egyptians used diorite balls to carve granite.

- ◆ Tombstones & Memorials
  - ◆ Flooring tiles
- ◆ Paving and Curb stone
  - ◆ Countertops
  - ◆ Floor tiles



Statue of Godea, carved about 210 BC in Mesopotamia, currently displayed in the Metropolitan Museum of Art

Photo by *Pierre Selim* and used under Creative Commons License at *Wikipedia*  
[https://commons.wikimedia.org/wiki/File:Statue\\_of\\_Gudea\\_-\\_MET\\_-\\_59.2.jpg](https://commons.wikimedia.org/wiki/File:Statue_of_Gudea_-_MET_-_59.2.jpg)



Incan masonry wall, carved of diorite bricks, in Cuzco, Peru  
Photo taken by *Håkan Svensson (Xauxa)* and used under Creative Commons License at *Wikipedia*  
<https://commons.wikimedia.org/wiki/File:CuscoPiedra12angulo.jpg>

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