

Daisy Mountain Rockchips

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APRIL 2017

SILICIC VOLCANOES OF AZ OR VOLCANO GO BOOM!!

By Susan Celestian

In the last issue, I described and discussed Mafic or Basaltic Volcanoes. Those lavas erupted at high temperatures (1000°-1200°C or 1832°-2192°F), and are very fluid (non-viscous). Looking at the rock chart below (Figure 1), we can see that there are two other types of lavas — Rhyolite and Andesite.

	Light color	Intermediate	Dark
Fine-grained:	RHYOLITE *white, lt gray, pinks * very viscous lava	ANDESITE *med-dk gray * very viscous lava * stratovolcanoes	BASALT *black, dk gray, rust red * very fluid lava
Coarse-grained:	GRANITE *grays, pinks, (red) * visible quartz	DIORITE *salt and pepper * no visible quartz *plagioclase, K-	GABBRO *black * no visible, often visible olivine
	OBSIDIAN → *glassy, black, rust-red, greenish,		
	PUMICE →		
	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

Both Rhyolite and Andesite are high in silica. Rhyolitic magma erupt at 650°-800° C (1202°-1472° F), and Andesitic magma at 800°-1000° C (1472°-1832° F). As a result of the high silica content, and lower temperatures, these magmas exhibit medium-high viscosity (resistance to flow). In fact, rhyolitic magma is 1 million to 100 million times more viscous than water. In most, cases, these lavas don't really flow, or don't flow far; but rather bulge or ooze to the surface as a dome. This high viscosity results in the magmas choking the volcanic vent, and blocking the escape of gases. Gas pressures build up behind the magma blockage, until they exceed

Silicic continued on page 9.....

CLUB EDUCATIONAL OUTREACH REWARDING

By Bill Smardo

On April 2016 Bob Salter and Bill Smardo drove to Sunland Elementary School---5401 S. 7th Ave. Phoenix, Arizona.

The purpose of that visit was to speak to a 7th and 8th grade class on Rocks, Minerals, Continental Drift, and Fossils. This visit was prompted by Sarah Wallace, a teacher that attended our 2016 show. At that show she asked Bob Salter if our club spoke to groups on the subject of Geology. Bob indicated that we would be interested and to that end we later contacted Sarah and set a date. Our program was well received by her students.

Sometime later while preparing for our 2017 show it occurred to us that because of their intense interest in Geology, maybe after our show Sarah would like us to load up our rocks and minerals and bring them to their school and let the students choose rocks and minerals for the purpose of building a personal collection at no charge.

NOTE: the club was not charged for the rock cases or any specimens. A great number of the specimens were collected on our club collecting trips. Many people from the club donated specimens including Claudia Merek, Dave Hanline, Herb Jacobson, Whitt Revell, Bob Evans, Nancy Gallagher, Howard and Linda Roose, Joey Gecho, Robin Shannon, Ron and Ginny Okubo, Ed and Susan Winbourne, Steve Joey and many more. Sarah was receptive to the rock collection idea and we set a date for the day after the show. Which we changed to the following Thursday.

Outreach continued on page 3.....

INSIDE THIS ISSUE

Silicic Volcanoes & Rhyolite/Andesite	1, 9-13
Club Educational Outreach	1, 3
Minutes	2-3
President's View	2
Upcoming Field Trips	4
Planet Mine Trip	5-7
Show list, Club Information	14
White Mountain Show Poster	15
Uses of Rhyolite, Andesite, Pumice & Obsidian	16

Board Meeting Minutes — April 4, 2017

The meeting was called to order by President Ed Winbourne at 5:20 p.m. Those present were: Ed W., Cynthia B., Victoria P., Bob S., and Jim R. A quorum was established.

Financial Report:

Treasurer Cynthia reported net Show income of \$9156, with expenses of \$6,649.91 and gross income of \$15,806.

Show Marketing:

Ed suggested the club increase social media advertising as more people came due to these venues than magazines including 85086, 85087, and Images. Jim R. reported there were fewer paid attendees by about five percent than last year. He felt the Club fliers were good and possibly the drop in paid attendance was from many activities planned for that weekend.

Show Security:

There was discussion relative to security at the show. There was a reported theft by one of the vendors. The vendors had been advised not to place expensive pieces near the walkways or doorways. The club provided volunteer security personnel and the school has cameras at the facility.

Facility:

Ed mentioned next year we will move all vendors in to the main room and not use the hallways for vendors. This should provide better security as well as more traffic for the vendors.

Ed also suggested that we consider having sponsors for a Show Catalog (magazine). This magazine would provide names and a schematic showing the locations of each vendor. These sponsors would pay for advertising in the Catalog. This idea was supported and will be discussed in detail for the 2018 Show.

Ed stated the Show was a great success from the perspective of income and the vendors' appreciation.

Scholarship:

Because of the positive financial health of the club, discussion ensued relative to increasing the scholarship given to a student at Boulder Creek High School

Motion: Upon motion made by Bob S., seconded by Jim R. and unanimously carried, the yearly scholarship awarded to a Boulder Creek High School student is increased from \$500 to \$1,000.

Minutes continued on page 3.....

PRESIDENT'S VIEW

Our club has grown in many ways over the past few years. We not only have grown in numbers but have a depth of expertise that we have only begun to tap into. One area that this has been demonstrated in has been in our educational programs. Bill Smardo and Bob Salter have taken the lead in extending the club's reach beyond our membership and have taken the wonder of our hobby to schools in Anthem and in Phoenix. We have participated in Steam Night at the Anthem School for the past three years. Bill and Bob have also visited the Sunland School in Phoenix last year at the request of Mrs. Rojas, a seventh and eighth grade teacher there. She had attended our show and was impressed with our club and reached out to us requesting we make a presentation on geology to her students. This year Mrs. Rojas went one better and requested and received funds through her school Principal to transport thirty plus students to our Rock and Gem Show. She not only was the funds granted, but Principal Carrillo drove the school bus to the show. The students had never attended a rock and gem show. They all demonstrated a level of knowledge of what they saw and enthusiasm to learn more.

I learned that first hand from talking to them. In one instance I approached two young ladies who were looking at fossils for sale. One of them asked me how the age of the fossils was determined. I began to explain that the fossil could be carbon dated, or the material the fossil was found in could dated. As I was explaining that newer material is generally found on top of older material, one of the girls interrupted me to point out that that is the law of superposition. She was spot on. She told me she learned that at school and wants to learn more about geology when she goes to college.

Bill Smardo has experience as a teacher. Bob Salter has lived his life as a career field geologist. We have other members with like skills and knowledge that can be used to reach out to the community and bring the wonders of the earth life. The Executive Board has appointed Bill Smardo to head up our educational work. Anyone wishing to lend a hand, offer ideas, or help in any way can contact Bill, Bob, or any of the club officers in order to take part in this vital activity.

Ed Winbourne

....Minutes continued from page 2

Club Equipment:

Cynthia stated the Club needs a list of equipment owned by the Club for insurance as well as net worth purposes. After discussion, a list will be compiled.

Ed reported he had purchased the two grinders (faceter) and 18" saw previously discussed at February Executive Meeting for \$1900. He has also purchased a trim saw, edger, and grinder/sander for \$725. The selling party also has a cabbng machine for sale for \$650; Ed will look at this. The Board previously had approved equipment purchases of \$5,000; with these present purchases of \$2,625, the Club has \$2,375 remaining for additional purchases.

Note: The \$5,000 amount for lapidary type equipment was approved previously to provide funds for purchasing used equipment which is generally at a price much less than retail and the purchases must be consummated in a timely manner; i.e. it generally cannot wait for individual item Board approval.

Membership:

Victoria reported 73 people signed up to receive membership information at the Show. Emails were sent out to all 73 attaching pertinent membership information. Eileen followed up with telephone calls to those individuals whose emails were returned "undeliverable."

A special "thank you" to Eileen for all the work she put in staffing the Membership table. She volunteered 15 hours for the two days of the show as well as assisting in set up.

Victoria reported we have several name badges which members have not picked up. She questioned whether it was advisable to provide badges with membership as we increased dues by \$5 to include badges; however, the badges cost the club \$8. Ed suggested we keep the badges as part of membership; however, ask the new member if they wish one, and only order a badge if they ask for one.

There being no further business, the meeting adjourned at 6:15 p.m.

Respectfully submitted, Victoria Peterson, Secretary

**No General Meeting Minutes were taken —
April 4, 2017**

....Outreach continued from page 1 ²

We received a call from Sarah before the show saying she was able to get a bus from the school to transport students to our show, and our club waived the admission fee for the students and their counselors. These students very much enjoyed their visit to our show.

The events of the day we visited Sunland School went as follows:

Each student received two egg cartons—one for minerals and one for rocks. Each carton included a typed key (glued to the cover) with the name and number of each specimen. Each specimen was marked with a typed and glued-on number. Each student received a total of 56 specimens. After the students completed their collections, Bob Salter spoke for some time on rock and mineral formation, and uses and economic aspects of them. One of the amazing facts that Bob offered was that for all the gold that has been discovered, the total value pales into insignificance compared to just that money spent on sand and gravel. Just think of the billions of tons used for concrete buildings, bridges, roadways, walkways etc.

Bob was also asked to answer questions about his career as a professional geologist. Great questions from interested students and great content and delivery by Bob.

At the close of our presentation we donated to Sarah a collection of marine fossils collected in Florida from the Burmont Formation, 2.5 million years old. These fossils were purchased at a screaming great price at the Quartzite show, at no cost to the club. There were enough specimens to give one to every student (60+) by the teacher, with a string attached--that being each student was responsible for research and a report on the fossil given to them.

We will be updating the activities of the educational arm of the club shortly, since we are considering several new educational activities prompted by club members, and subject to board approval.

On an ending note—our club's kid's corner sold or gave away nearly 8000 specimens of rocks and minerals, including the egg cartons. Do the math: 170 cartons of 27 specimens each = 4,590 sold at show.

UPCOMING FIELD TRIPS

WHEN: Saturday May 6, 2017

WHERE: Reserve Bank Mine

WHAT: Copper Minerals, Underground Tour (optional)

LEADER: Dave Haneline (dhaneline@cox.net)

MEET: Leaving Anthem at 7:00 am (more details anon)

OTHER: High clearance vehicle, preferably 4WD, FEE: \$5 per person includes a 5-gallon bucket of rock (additional rock \$1/pound). There will be jewelry made of copper they smelt and make into wire, and small ingots of copper, for sale.

WHEN: Saturday June 3, 2017

WHERE: Lynx Creek

WHAT: Gold

MEET: TBD

WHEN: August? TBD 4 days, at least

WHERE: Royal Peacock Opal Mine, Denio, NV

WHAT: Opal, Black Opal, Opalized fossils

MEET: TBD

OTHER: Fee: \$190/person; Go to the mine website for more information about the site <http://royalpeacock.com/fee-digging>



Opal from Royal Peacock Mine
Photo by Sheryl, posted at
<http://rockhoundblog.com/regular-postings/reader-tells-about-her-trip-to-the-royal-peacock-mine-in-the-virgin-valley/>

UPCOMING FIELD TRIPS CONTINUED:

WHEN: October 14 & 15

WHERE: Gem-o-rama, Trona, CA

WHAT: Pink Halite, Hanksite, Sulfohalite, Tincalconite after Borax, others

MEET: TBD

LEADER: Stan Celestian

OTHER: There is a dry campground of sorts in Trona (\$8/night), or motels in Ridgecrest, 24 miles away.

Other field trips are being considered and information will be posted in the monthly newsletter and described at meetings, or via email. And if you have somewhere to which you would like to see a field trip scheduled, let your Field Trip Committee know.

DATES SUBJECT TO CHANGE



Stan Celestian has created a page in Flickr where he is posting photos from club field trips. Currently, the Planet Mine trip is the only album there, but he will be adding more soon.

If you have some photos that could be added to the albums, send them to stancelestian@gmail.com.

The site can be found at

<https://www.flickr.com/photos/149654042@N02/albums/with/72157682683515735>

PLANET MINE TRIP

On Saturday, April 22, 2017 the Anthem Rock and Mineral Club journeyed to the Planet Mine -- aka Planet Copper Mine, New Planet Mine, Planet Mine Group, Great Central Mine -- 28 miles NNE of Bouse, in La Paz County (Lat 34°14'34"; Long 113°57'50"). See below for a satellite image of the area. It is actually a collection of numerous adits and shafts, worked for Fe-Cu-Ag-Au-Silica, during its life. The mine (comprised of 32 patented claims in 1962) was prospected as early as 1863, making it one of the oldest copper mines in Arizona. From 1864-1874, the mine produced ore ranging from 20%-60% copper, in discontinuous breccia, pockets and stringers. Most of the ore went to San Francisco, although some went to Swansea, Wales, for smelting. At its peak in 1867, 500 miners were employed. By 1884, a smelter was built at the site. Slag produced by early operations assayed out at 5% copper! The mine closed in 1917 (1937?), after a total of 3 million pounds of copper had been produced. By comparison, the nearby Swansea-Clara Mine produced 27 million pounds of copper, between 1910 and 1930. Subsequent to closure, gold was mined in the area, and there has been interest in the potential of the area's common hematite, as iron ore.

Minerals collectible there are: hematite, malachite, chrysocolla, chalcantinite, and natroalunite.

Other sites of interest in the area include the ghost town (partially reconstructed) of Swansea, and the East Cactus Plain, within the dune area between Bouse and Planet.



Satellite image courtesy of Google Earth

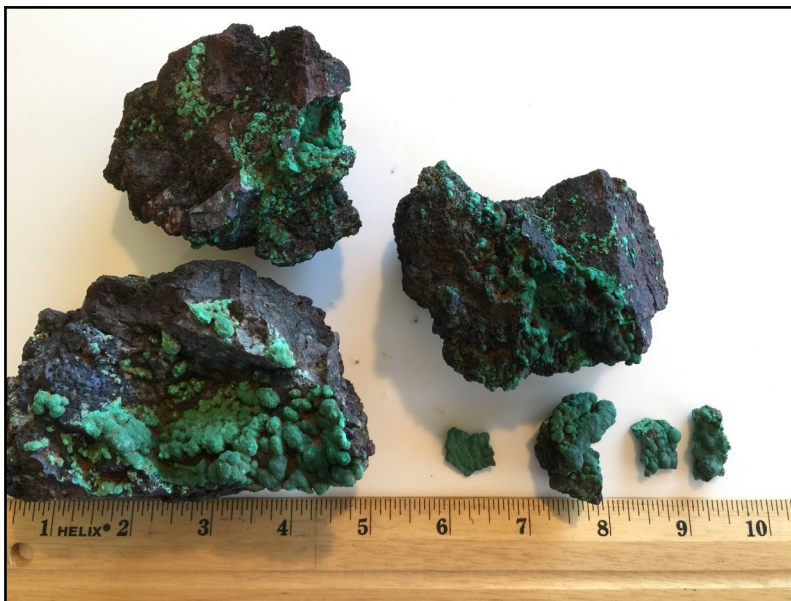
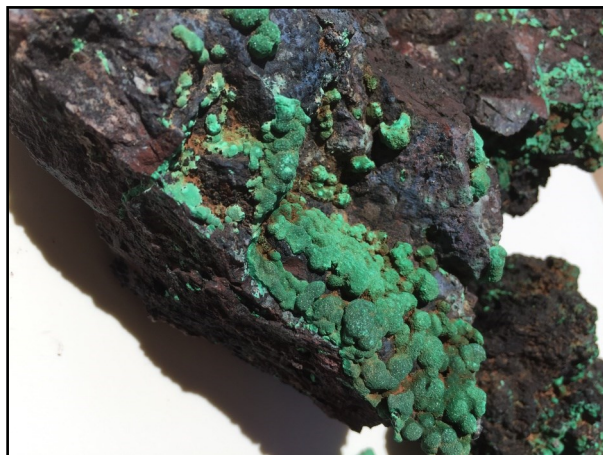
...Planet Mine continued from page 5



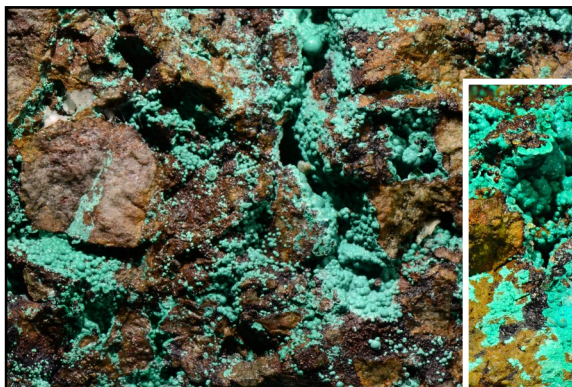
The adits of the Planet Mine Group riddle the walls of the canyon, strewn with large boulders of specular hematite. The photo to the right highlights those shiny, black boulders. *Photos by Stan and Susan Celestian*

Planet Mine continued on page 7.....

....Planet Mine continued from page 6



Botryoidal malachite collected by Dave Haneline.
Photos by Dave Haneline



Photos by Stan Celestian



Lots and lots of malachite!

Leaving the Planet Mine area and wandering the East Cactus Plain

Photos by Stan and Sue Celestian



Boulder of gneiss, with squiggly foliation, indicating very high heat and pressure.



Ocotillo aka Coachwhip,
Jacob's Staff, Vine Cactus



The following tracks and trackways were photographed in March. See what you might spot if you walk the dunes of the East Cactus Plain?



Scorpionweed or Blue Phacelia (*Phacelia distans*) The flowers, stems, and seed pods are covered with hairs that contain an oil that can cause a poison ivy-like itchy rash.

Snake trackway



The photo in the lower right looks like a snake fight site. Two snake trails converge on a disturbed patch, and only one trail goes away. Or maybe three snakes converged, and no one slunk away. What do you think???



....*Silicic* continued from page 1

the confining pressures — and the volcanoes explode violently. Mt. St. Helens is a great example of this style of eruption, which involves towering ash columns, formation of large craters and calderas, powerful nueé ardent, and lahar.

Volcanic craters are circular depressions over a volcanic vent, and from which lava, gases, and ejecta erupt.

Calderas are also generally circular, but they are large collapse features, resulting from an explosion that empties the once-supporting magma chamber below.

Nueé ardent or pyroclastic flows are swiftly-moving (up to 450 mph), ground-hugging clouds of hot (1830°F), expanding gases mixed with ash and rock. Pompei was overrun by one of these.

Lahar are mudflows or debris flows, composed of volcanic fragments (clay-size to boulders exceeding 30 feet in diameter). They may be precipitated by heavy rainfall or snowmelt mixing with the abundant loosely-packed fragmental deposits, or by a violent eruption that causes snow to melt (or lakes to drain). The flows generally follow established valleys, and may be quite vigorous!

The volcanoes built up by lava flows that do not flow far from the vent, alternating with layers of tephra (volcanic debris), are called **stratovolcanoes**. They are high-profile mountains, with very steep, conical peaks. The mountains of the Cascade Mountains in Northern California up through Washington are all examples of stratovolcanoes. **Lava Domes** are also typical. These are rising bulges of lava (there is one forming in Mt. St. Helens caldera). Also, **Tuff**, **Obsidian** and **Pumice** are typically associated with these magma compositions.

In Arizona, there are ten centers of silicic activity, including Aquarius Mts., Chiricahua Mts., Superstition Mts., Tucson Mts, and volcanic centers in the San Francisco Volcanic Field — San Francisco Peaks aka “The Peaks” (a stratovolcano), lava domes Mt. Eldon and Sugarloaf Mountain (0.09 mya), O’Leary Peak, and the White Horse and Hochdorffer Hills.

“The Peaks” erupted between 1 million and 0.1 million years ago. The Inner Basin is a probably a caldera, a result of collapse, mass wasting or erosion, or a combination of these actions. During the last Ice Age, the Inner Basin supported several glaciers, that scoured out valleys. The highest peak is Humphrey’s Peak, that rises to an elevation of 12,633 peak. See Figures 2-4.

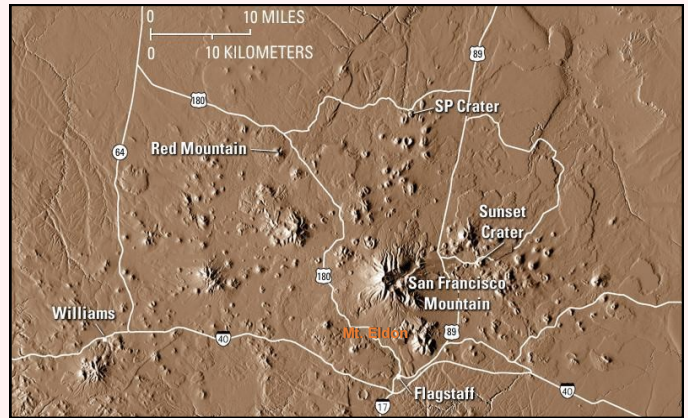


FIGURE 2 Digital Elevation Model (DEM) of the San Francisco Volcanic Field, showing silicic San Francisco Mountain and Mt. Eldon, centrally located within the field of over 600, mostly basaltic volcanic vents.

Image courtesy of the USGS

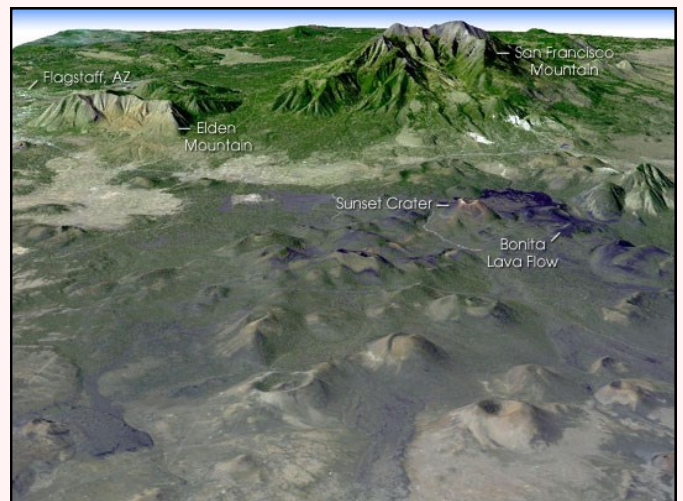


FIGURE 3 A composite view of San Francisco Mountain and Mt. Eldon. *Image courtesy of NASA*

Silicic continued on page 10.....

....*Silicic* continued from page 9



FIGURE 4 San Francisco Mountain This is a view from the east, and looking into the Inner Basin. The dashed blue line shows what the profile of the mountain might have looked like before it was altered by explosion and/or erosion. *Photo by Stan Celestian*

Mt. Eldon (Figure 5), on the northern outskirts of Flagstaff, is a dacite (rock equivalent to andesite, with free quartz) lava dome, and was built up by a series of overlapping flows, over a period of a few months. In fact, some of the bulges, did not break the surface, but tilted up the sedimentary rocks above them.



FIGURE 5 Mt Eldon This aerial view of Mt Eldon highlights the lobes of overlapping lava flows. Note that the viscous dacite lava did not flow far from the vent(s). *Image courtesy of the USGS*

O’Leary Peak (Figure 6) erupted 0.17-0.23 mya, and now stands guard over the volcanic field at Sunset Crater.



FIGURE 6 O’Leary Peak is a steep-sided mountain, formed when very viscous rhyolite lava oozed to the surface, and explosive eruptions formed layers of ash and vent-hugging lava flows. In the foreground is the Bonito Flow — an a’ a’ basalt flow, issued from Sunset Crater. *Photo by Stan Celestian*

A further description of rhyolite and andesite follows.

**RHYOLITE & ANDESITE
(the stuff of domes and pointy peaks)**

- ▶ Like basalt, rhyolite and andesite are dense and fine-grained, because they cool relatively quickly at the Earth’s surface.
- ▶ *Rhyolite* tends to be light gray or light pastel colors, such as pink and green; however brown and even darker colors are possible. See Figures 7-10. *Andesite* tends to be a bit darker than rhyolite, but lighter in color than basalt — medium to dark gray or bluish gray. See Figure 11-12.
- ▶ Both rocks are typically porphyritic (have visible crystals “floating” in the mostly fine-grained background.) The phenocrysts (visible crystals) in *rhyolite* are typically quartz or feldspar; while those of *andesite* are typically white feldspars or black ferromagnesian (augite, hornblende, biotite). See Figures 7-12.

....*Silicic* continued from page 10

- ▶ Being high in low-density silica, and deficient in high-density iron and magnesium, rhyolite and andesite are not as heavy as basalt.
- ▶ Much cooler than basaltic lavas, rhyolitic lavas extrude onto the surface at about 1292-1652°F, and andesitic lavas at 1742-2192°F. As a result, the silicon molecules have begun to interlink, and the lavas are very viscous (not fluid). ***
- ▶ Because rhyolitic and andesitic lavas are so pasty (viscous), the eruptions tend to be explosive; and the volcanoes built up as layers of ash and other fragmental deposits alternate with lava flows that pile up near the vent. As a result, the mountains have very steep slopes (*stratovolcanoes*), and a distinctive profile.
- ▶ Besides stratovolcanoes, another very common topographic feature is the *lava dome* — a steep-sided mountain formed by lava bulging to the surface. In addition, lots of ash (Tuff), large fragments (Volcanic Breccia), pyroclastic flow deposits (Welded Tuff), and lahar deposits (described on page 5), plus obsidian, are associated with viscous flows. See Figures 13-15.



FIGURE 7 *Porphyritic Rhyolite from Topaz Mt., Utah* The large crystal in the center is a topaz crystal, that formed in a vug, as hot gases permeated the flow. But look closely at the host rock, and you will see clear, shiny crystals of sanidine (a feldspar). These crystals formed in the cooling magma, prior to eruption. Photo by Stan Celestian



FIGURE 8 This light gray rhyolite is from Graham County, near the Grand Reef Mine. The black plant-like features are manganese oxide dendrites, that crystallized onto (and into) the rock, out of water, long after the rock formed. Photo by Stan Celestian



FIGURE 9 A pinkish rhyolite exhibiting flow-banding, resulting from frictional contortion of layers, when there was physical segregation of crystals within the magma. From western Maricopa County. Photo by Stan Celestian



FIGURE 10 A brown porphyritic rhyolite, with well-formed feldspar crystals. Photo by Stan Celestian

....Silicic continued from page 11

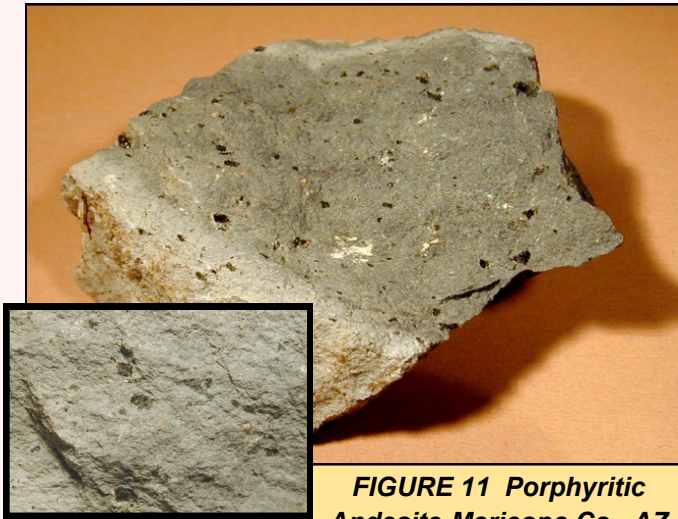


FIGURE 11 Porphyritic Andesite-Maricopa Co., AZ

Note that the color is an intermediate gray, and there are numerous visible black crystals of hornblende.

Photo by Stan Celestian



FIGURE 12

This dark gray porphyritic andesite is from the Mule Creek area, in New Mexico, just east of Morenci, Arizona. It sports huge phenocrysts of white feldspar crystals.

Crystals are up to 3 inches long! Photo by Stan Celestian



FIGURE 13
Obsidian, or volcanic glass.

Glasses have no crystals and exhibit conchoidal fracture. Photo by Stan Celestian



FIGURE 14 Volcanic breccia from the Aquarius Mts. in Mohave Co., AZ This rock results from the accumulation of fine-large fragments of pre-existing rocks broken up in a volcanic explosion, perhaps a pyroclastic flow. If the particles are hot enough the particles may weld together to form a very dense rock. (The black fragments are obsidian).

Photo by Stan Celestian

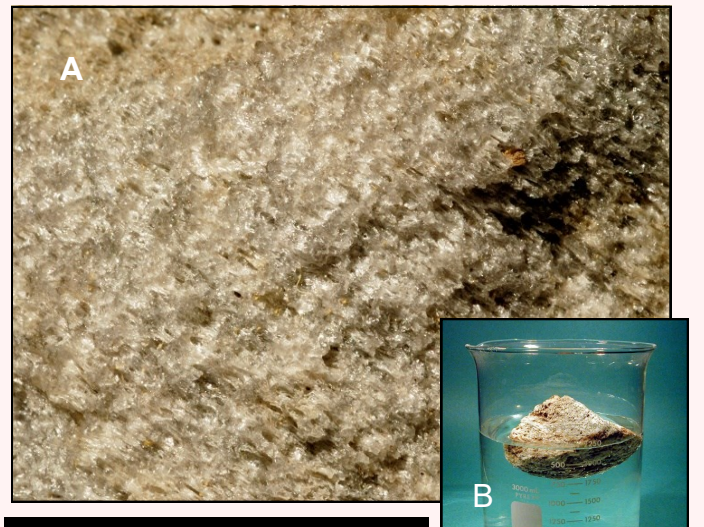


FIGURE 15
Pumice

A - A close up view, glassy and vesicular (up to 90% open space)

B - Pumice is full of weakly-connected holes and will float in water

C - This is a water-deposited breccia, in which the particles are bits of pumice.

All samples are from Northern Arizona.
Photos by Stan Celestian

....Silicic continued from page 12

► Silicic volcanoes are typically found at convergent boundaries, where basaltic oceanic floor is subducted (dives) down under the

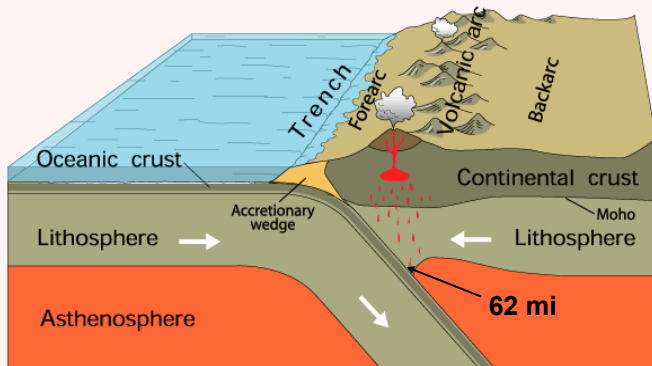


FIGURE 16 Oceanic-Continental Convergence
Where an oceanic plate collides with a continental plate, the oceanic plate with subduct.
Graphic courtesy of the USGS

continental crust (which has a general composition of andesite). At depths of around 62 miles, the oceanic rocks begin to melt. See Figure 16.

In Arizona, older rhyolites/andesites are associated with subduction of the Pacific Plate under North America. Younger rhyolitic/andesitic volcanoes (such as those of the San Franciscan Volcanic Field) occur quite a distance away from any boundaries, and instead are thought to be associated with a hot spot. And, as I wrote last month, one expects basalt to flow over a hot spot. Most of the volcanoes of Northern Arizona are basaltic, but “The Peaks” and O’Leary are not. It is thought that they may be the result of **magmatic differentiation** of all that basaltic magma. As some of the basaltic magma chambers cooled, crystals of the more Mg/Fe-rich minerals crystallized, and settled out, leaving a more silica-rich magma behind. Plus, there may have been some assimilation of continental crust as the magma migrated upward. As the continental crust melted or partially melted, the composition of the rising magma changed.

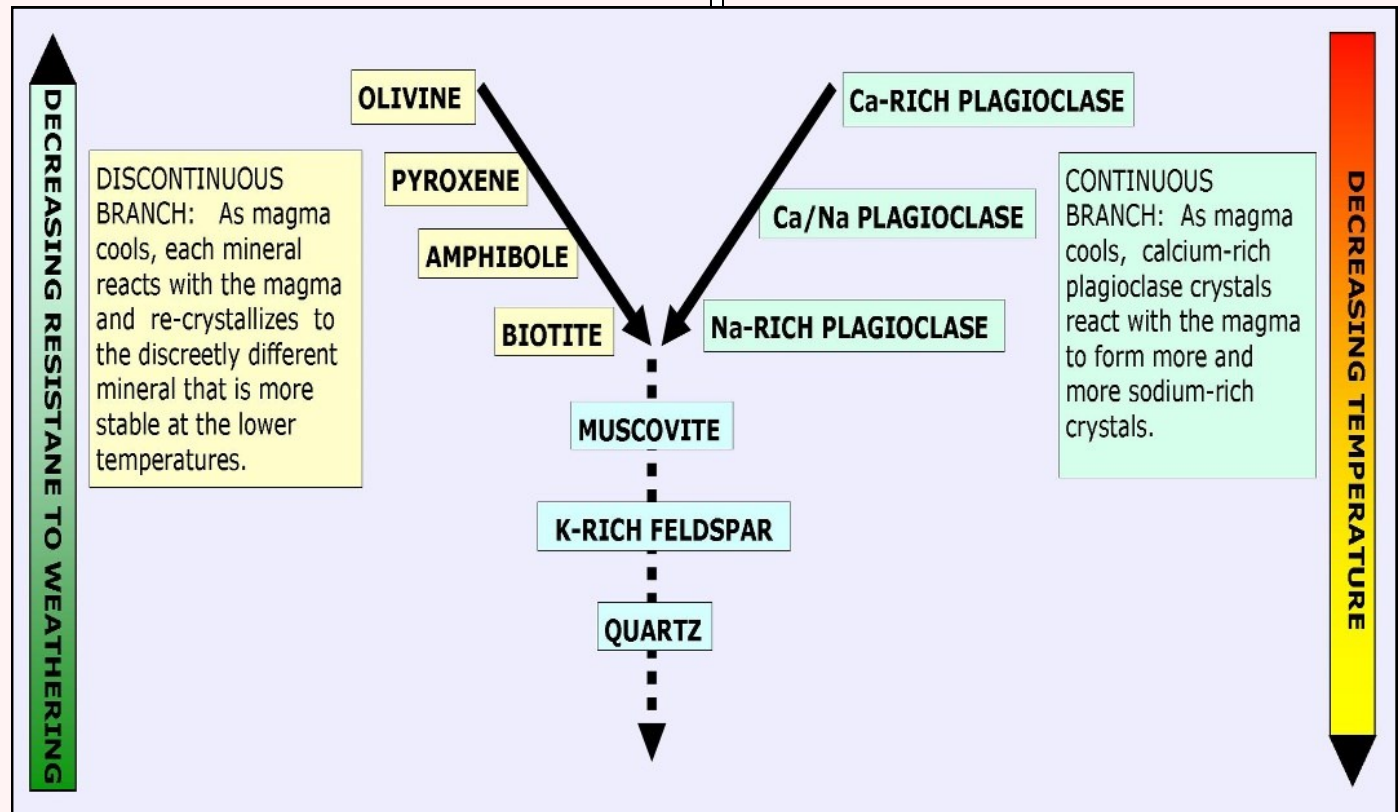


FIGURE 16 Bowen’s Reaction Series
This diagram depicts the order in which minerals crystallize in a cooling magma. *Diagram by Susan Celestian*

This diagram depicts the order in which minerals crystallize in a cooling magma.

UPCOMING AZ MINERAL SHOWS

Monthly - Tempe, AZ Gallery TCR , 906 S Priest, #107; Sat 9-6; Free. For dates, go to: https://www.facebook.com/pg/gallerytcr/events/?ref=page_internal

May 6-7 - Kingman, AZ Mohave Co. Gemstoners; Kingman Academy of Learning, 3420 N Burbank Av.; Sat 9-5, Sun 9-4; Admission: free.

May 27-28 - Pinetop, AZ White Mt. Gem and Mineral Club; Hon-Dah Convention Center, 777 Hwy 260; Sat 9-6, Sun 10-4; Admission: \$2/adult, \$1/seniors.

May 27-28 - Bisbee, AZ City of Bisbee; Queen Mine, 478 N Dart St.; Sat-Sun 9-5; Admission: free.

June 2-4 - Flagstaff, AZ Coconino Lapidary Club Gem, Mineral and Jewelry Show, Silver Saddle Outdoor Market, Hwy 89N & Silver Saddle Rd (3.5 mi north of Flagstaff Mall); 9-4 daily; Admission: free.

August 4-6 - Prescott Valley, AZ Prescott Gem and Mineral Club; Prescott Valley Event Center, 1301 Main; Fri-Sat 9-5, Sun 9-4; Admission: \$5/adult, \$4/seniors, children under 12 free.

October 6-8 - Buckeye, AZ Helzarockin' Gem & Mineral Show, Helzapoppin' Arena, 802 N 1st St (Miller Rd); Fri-Sat 9-4, Sun 9-2; Admission: \$3/adult; children under 12 free.

October 21-22 - Sedona, AZ Sedona Gem and Mineral Club; Sedona Red Rock High School, Hwy 89A & Red Rock Loop Rd; Sat 10-5, Sun 10-4; Admission: \$3; children under 12 free.

November 3-5 - Black Canyon City, AZ High Desert Helpers Rock-a-Rama Gem and Mineral Show; High Desert Park, 19001 E Jacie Ln; Fri 9-4, Sat 9-5, Sun 9-4; Admission: free.

If you are travelling, a good source AND clubs is <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/shows.php?current=1> A good source for a list of Arizona Mineral Clubs and contact information is <http://whitemountain-azrockclub.org/Public AZ Clubs Links.html>

www.dmrmc.com

Visit the club website periodically. See what is happening, and boost our visibility on the web.

NOTE FROM THE EDITORS

Have a geological interest? Been somewhere interesting? Have pictures from a club trip? Collected some great material? Send us pictures -- or write a short story (pictures would be great). We encourage topic suggestions also.

Deadline for the newsletter is the 22nd of the month.

Mail or Email submissions to:

Susan Celestian
6415 N 183rd Av
Waddell, AZ 85355
azrocklady@gmail.com

Facebook

Visit the club website periodically. See what is happening, and boost our visibility on the web. Go to: The Daisy Mountain Rock and Mineral Club.

Officers and Chairpersons

- President:** Ed Winbourne.....ewinbourne@gmail.com
- Vice President:** Stan Celestian.....stancelastian@gmail.com
- Secretary:** Victoria Peterson.....g.victoriapeterson@yahoo.com
- Treasurer:** Cynthia Bucknercbuckrun1@q.com
- Publicity:** Kathy Marvin
- Membership:** Victoria Peterson
- Editors:** Susan & Stan Celestian.....azrocklady@gmail.com
- Field Trip:** Stan Celestian stancelastian@gmail.com
- Show Chair:** Ed Winbourne

Meetings are held the **1st Tuesday of the month** at the **Anthem Civic Building**, 3701 W Anthem Way, Anthem, AZ 85086. Business meeting at 6:30 pm. We do not meet in the summer — **no meetings in June, July or August.**

The purpose of Daisy Mountain Rock & Mineral Club is to promote and further an interest in geology, mineralogy, and lapidary arts, through education, field experiences, public service, and friendship.

Membership Dues: \$20.00 Adults per Person \$25.00 Family

Meeting Dates for 2017

Jan 3, Feb 7, Mar 7, Apr 4, May 2, Sept 5, Oct 3,

WHITE MOUNTAIN GEM & MINERAL CLUB PRESENTS

20th GEM, MINERAL & FOSSIL SHOW

Club website: <http://www.whitemountain-azrockclub.org>



JEWELRY, GEMS, MINERALS, FOSSILS, BEADS

LAPIDARY EQUIPMENT and SUPPLIES, DISPLAY CASES,
DOOR PRIZES, SILENT AUCTION, RAFFLE, WHEEL OF FORTUNE,
CHILDREN ACTIVITIES, and MORE

MAY 27-28, 2017

SATURDAY 9:00 am - 6:00 pm

SUNDAY 10:00 am - 4:00 pm

LOCATION

HON-DAH RESORT &
CONFERENCE CENTER

Junction of State Routes 73 & 260
Pinetop, Arizona 85935

SHOW COORDINATOR

Gary Alves

(928)-679-3644

Garyalves.chairman@gmail.com

ADMISSION

ADULTS \$2.00

JUNIORS (18 and under with Student ID) FREE (accompanied by an adult)

SENIORS 70 & Over \$1.00

Sponsor is a Non-Profit Organization



RHYOLITE, ANDESITE, PUMICE & OBSIDIAN in our Everyday Lives

Andesite and rhyolite are used:

- ◆ As aggregate/fill in general and road construction
- ◆ Due to their fine-grained texture, andesite and rhyolite have been used historically as projectile points and scrapers

Pumice is used:

- ◆ Primarily to make lightweight concrete; insulative cinder blocks
- ◆ As decorative ground cover in horticulture/landscaping, and as a substrate in hydroponic gardening
- ◆ As an abrasive: in pencil erasers, in “Lava” soap, for skin exfoliation, in stone-washing denim
- ◆ In tire rubber, for increased traction
- ◆ As a filtering medium: wastewater treatment, reverse osmosis, desalination, potable water

Obsidian is used:

- ◆ As surgical scalpels, fine knife blades (obsidian breaks to form a very thin, non-jagged edge); historically used as arrowheads, knives, scrapers
- ◆ As gemstone

Perlite is hydrated/altered obsidian. When heated, included water vaporizes and escapes, causing the rock to expand or “pop”, increasing in volume 7-16 times. It is very porous, and is used:

- ◆ As a lightweight component of concrete, mortar, plaster, ceiling tiles
- ◆ As insulation - heat resistant, sound reduction (safes, walls, doors....)
- ◆ As soil amendment (holds water, anti-compaction properties)
- ◆ As hydroponics medium (seed starting, rooting cuttings)
- ◆ As carrier of pesticides and herbicides
- ◆ As filtration medium (beer, wine, juice, wastewater, pharmaceuticals, water, other chemicals)
- ◆ As additive to foundry linings and ceramic clays
- ◆ As explosives filler
- ◆ In biotechnology (stable, non-toxic, resistant to microbial attack)
- ◆ As chimney flue re-lining
- ◆ As paint texturizer
- ◆ Abrasive: soap, polishes, dental compounds, stone washing compounds
- ◆ Absorbent (oil, pollution/spills)