

2017 - 2018

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TUCSON GEM & MINERAL SOCIETY

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EXPLORE DISCOVER SHARE

President's Page

Greetings all,

TGMS 1st annual "TGMS Family Fun Day" was a huge success, with an amazing turnout. I want to personally thank all of our volunteers and coordinators. The biggest question had been answered, "Will anyone come?" And the answer was yes! We had almost 200 people come through our doors. The "cave" was a big hit with the kids, I watched several of them go through it over and over again, with huge smiles. Adults were engaging with the kids in all the stations, which was our goal. The NEW biggest question is how do we follow up with the community that has been reached.

We are always looking for volunteers and new ideas, so please bring your suggestions to the next General Meeting, as a group we should have be able to come up with something great.

TGMS annual Mineral, Fossil, Jewelry, Art & Craft Sale will be coming up on December 2nd, so make arrangements to do some early Christmas shopping. Last year's sale had some amazing deals and beautiful items for you or a loved one. If interested in a booth (If available) or "volunteering" to help organize or work, please contact Vera Schlichter or Pat McClain for more information.

The holiday season is right around the corner, and our annual Christmas Party will be coming up on December 13th so mark your calendar. This has always be a good time for fellowship and to celebrate with family/friends. We will have an amazing traditional Christmas Dinner, so please bring your appetite and Christmas spirit. TGMS Member's cost will be \$5 and a guest will be \$10, so make sure you sign up for this event.

Volunteer forms have been sent out to all members for our 2018 Tucson Gem and Mineral Show®. Please take a look at all the areas and find one that fits you; return these to the office no later than December 18, 2017.

Hope all of you have had a chance to get out on a field trip. Kerry Towe has put a wonderful schedule together. Remember, to enjoy these events, you need to have your membership up to date. Bill Shelton also has educational classes every month so sign up to participate in these as well.

Look forward to seeing all of you at the General Meeting in November,

Mike Hollonbeck,
President



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SOCIETY



TGMS General Meeting — September 11, 2017

The General Meeting of the Tucson Gem and Mineral Society was called to order by Vice President Les Presmyk at 7:00 p.m. A brief video welcome from President Mike Hollonbeck was watched in which Mike also thanked Les for presiding over the meeting in his absence. Visitors and new members were recognized and welcomed to the meeting.

PROGRAM: Barbara Muntyan's topic was "Fluorite in Arizona: An Overview." Mindat has 399 locations in Arizona and Mineralogy of Arizona lists 12 counties, none of which are north of I-10. Fluorite forms in a variety of environments often in association with quartz, calcite and barite and in a variety of colors. Barbara discussed the mine localities in Arizona and highlighted the discussion with photographs of fluorite found in each mine showing the colors and crystal formation.

BREAK: John Callahan provided refreshments including mini vegetable and mini fruit kabobs, snack crackers, mini tarts, cookies and his very popular filled finger potatoes. Many thanks.

OLD BUSINESS:

Approval of Minutes for May 1, 2017 General Meeting: **MOTION:** To approve the minutes as published in Rock Talk. Seconded and approved.

Life Membership: The Board recommended Kerry Towe for Life Membership in recognition of his work as Field Trip Coordinator. **MOTION:** To approve the recommendation. Seconded and approved.

Field Trips: Kerry Towe announced it was necessary to make some changes to the proposed schedule handed out in May. September remains the same with a trip to Duquesne on Friday the 15th and to Chiricahua National Mountain of Saturday the 16th. The October 7th trip to the San Carlos Reservation for peridot will be rescheduled and is replaced by a trip to Diamond Point which is east of Payson. The October 21st trip to Benson for Selenite has been replaced with a trip to the Blanchard Mine near Socorro, New Mexico as members of the Albuquerque, New Mexico Club. Membership is \$20. November 18th will be a trip to the Black Pearl Mine north of Wickenburg, aquamarine with pyrite and quartz. The trip to the Tiger Mine at San Manuel has been moved to November 30th.

The club house now has 130 new chairs. Let's keep them nice.

Family Fun Day: This will be Saturday September 30th from 10 a.m. to 3 p.m. It is free and open to the public with an emphasis on children and parents. There are 12 events planned and volunteers are needed. Tuesday, September 12th at 10 a.m. will be the final planning meeting. Please save newspapers for making a cave and bring to the club house by September 20th.

Active Membership: The Board clarified the term as follows: You will become an "Active Member" of TGMS when this form is processed, which may take up to 10 days. In order to attend special events (including field trips, summer pot lucks, holiday parties and the Show) as a member, the attendee must have been an Active Member with all membership dues fully paid.

Micromount Meeting: Monday, September 18 at 6:30 p.m.

NEW BUSINESS: None.

CALL TO THE AUDIENCE: None.

DRAWING FOR DOOR PRIZES: John Callahan, as meeting host, gave the first choice to Michelle Rucker. Drawing winners were Jim Baker, Donna Pugh, Robert Lind, Wayne Klement, Annaliese Foley, Stewart Towle, Bob Melzer, Mary Kirpes, Mattie Haydon, Bruce Kaufman, and Jennifer Isbel. Specimens were donated by The Kilian Collection.

The meeting was adjourned at 8:39 p.m.

Respectfully submitted,

Marilyn Reynolds,
Recording Secretary

TGMS General Meeting — October 2, 2017

The General Meeting of the Tucson Gem and Mineral Society was called to order by President Michael Hollonbeck at 7:00 p.m. Visitors and new members were recognized and welcomed to the meeting.

PROGRAM: Evan Jones, well known mineral collector and dealer, spoke on “Wulfenite, The Official State Mineral of Arizona.” It was noticed that Arizona had Official State everything else, but no mineral. Wulfenite was proposed as Arizona has more world class localities than any other place on earth and more occurrences than any other state with over 200. Wulfenite is a member of the scheelite group and is lead molybdate (PbMoO₄) occurring in oxidized lead deposits in hydrothermal zones. Wulfenite was featured in a special exhibit in the February 2017 TGMS Show to help publicize the effort to pass a bill making it the Arizona Official State Mineral. Dr. Alexander Schauss and Chris Whitney-Smith were largely responsible for getting SB2092 passed by the House on February 11, 2017 and by the Senate on March 16, 2017. The 2017 Wulfenite Calendar published by Lithographie was handed out by school children to legislators as they entered the State House. The stunning photographs favorably impressed the legislators. On March 22, 2017, Gov. Ducey signed the bill into law.

BREAK: Cathie Logan provided refreshments which included deviled eggs, lunch meats, cheese, shrimp salad, vegetables, pineapple, crackers, chips and apple dessert. Many thanks, Cathie.

OLD BUSINESS:

Family Fun Day: Pat McClain reported that the event was successful and fun with an attendance of 188 people. The raffle for free memberships resulted in 39 new members. Thanks to everyone who helped!

Field Trips: Kerry Towe announced the October 7th trip will be to Diamond Point near Payson for very clear quartz crystals on Forest Service land. October 21 will be the trip to the Blanchard Mine with the Albuquerque Club. From I-25 turn east on Hwy 380 to meet at the rock shop and go back to the mine for fluorite. November 4th will be the trip to Round Mountain. Meet at Love's in Lordsburg at 9:00 a.m. November 18th will be to the Black Pearl Mine north of Wickenburg for aquamarine with pyrite and quartz. November 30th will be to Tiger Mine in San Manuel.

U of A Gem & Mineral Museum: Dr. Alexander Schauss reported that the addition of “Gem” in the title is the result of the donation to the museum of an \$18 million collection of gems. Renovation is in progress at old Pima County Courthouse where the museum will have 11,000 sq. ft. of space which will include laboratories. A \$2 million donation has also been received from a Tucsonan to help with the move. There is still a need to raise \$9.5 million more so donors are needed. It is hoped the museum will open in January 2020.

Arizona Lapidary & Gem Rough, 7320 E. Broadway, presents Free Fall Festival October 21-22 featuring talks and demonstrations. There is a schedule on the bulletin board or go to arizonalapidary.com for information.

Micromount Meeting: Monday, October 9th at 7:00 p.m.

Educational Class: October 11th at 7:00 p.m. Topic is “Elements in Nature & Native Elements”.

NEW BUSINESS:

The 14th Annual Mineral, Fossil, Jewelry, Art & Craft Sale: Saturday, December 2nd from 9:00 a.m. to 4:00 p.m.

Community Food Bank: Please start bringing donations.

It was suggested that members thank the County Supervisors for allocating the funds to renovate the old Pima County Courthouse.

Les Presmyk requested that anyone knowing of a good speaker give the information to Pat McClain and him.

DRAWING FOR DOOR PRIZES: Cathie Logan, as meeting host, made the first choice. Drawing winners were Evan Jones, Barb Elliott, Kim Filips, Pete Peterson, Donna Pugh, Denis Menard, Ginny Peterson and Herb Ross.

The meeting was adjourned at 8:45 p.m.

Respectfully submitted,

Marilyn Reynolds,
Recording Secretary

“Crystals and Crystals Forms”

By Peter Megaw

It's that time of year again...not even Halloween yet and the (mineral) stores and shows are already full of Tucson Gem and Mineral Show® merchandise and publicity. (Gloria Staebler of Lithography has it right...she puts out a 16-month calendar in time for the Denver Show that runs through the next **two TGMS Shows!** This year's features Tourmaline and has some amazing photos)

So this must mean it is time for my annual encouragement to the membership to participate as **Exhibitors** in **YOUR SHOW** and/or volunteer to help out with some of the big jobs that need doing every year. Exhibiting takes surprisingly little time and provides an opportunity to look at your collection differently from usual...selecting the pieces that will best exemplify this year's Show Theme...or whatever focus you choose to present to the public. And of course since you'll already be down at the TCC doing another job during set-up, it provides a perfect excuse for getting away for a bit to set up your own case. (I can even provide a “note from the doctor” for your crew chief that gives you a temporary excused absence!). We'd love to be able to fill an exhibit “pod” with cases of members' minerals (or fossils) and that will make you eligible for the Schupp Award...best case of rocks from a TGMS member!



Photo: Mia Dixon

In case you've been hanging out on Mars and haven't heard, our theme for 2018 is “**Crystals and Crystal Forms.**” This theme was chosen as a way to celebrate one of the most fundamental aspects of minerals...their *crystallography*...without scaring off the folks for whom any ography/ology brings to mind mandatory science classes forgotten...or skipped...long ago. We also wanted to make the theme broader than the basic realities of textbook crystallography and let folks see show how natural crystals and crystal aggregates both honor those realities...and appear to deviate from them in myriad ways. So, those of you who collect cubic face-centered native elements are in...as are those of you who collect balls, bowties, pseudomorphs, green crystals and specimens that look like cats or dogs. I'm being silly here for a reason...**since by definition**

all minerals are crystalline, anything goes...so use your imagination and have fun!

Our theme looks like it is going to be very popular with exhibitors and we're expecting things like a 3-foot hot pink tourmaline, at least 18 cases of quartz of various colors displaying interesting crystal forms, a number of cases featuring huge and colorful crystals exemplifying the 6 crystal systems and a number of surprise cases featuring world class gems, minerals, carvings. You'll also see several cases devoted to our 2019 Arizona-centric theme “**Wulfenite is Loved**”, commemorating the Legislatures 2017 voting of Wulfenite as Arizona's Official State Mineral.

I used to teach crystallography to poor suffering geology undergrads and it is actually remarkably straightforward in its basic principles. The history of crystallography goes back at least to the ancient Greeks 200-300 years BC. They began with the fundamental geometrical question of how to fill 3-dimensional space with an infinite number of identical regular polyhedra without leaving any gaps. Despite a lot of minor complexities, they came to the conclusion that there are only 6 (or 7, depending on whether you're a lumper or a splitter) basic ways to do that. That pretty much set the state of the crystallographic art for more than 2000 years until X-Rays were discovered and it was literally proven overnight by Max von Laue that the atomic structures of minerals followed the Greeks' rules perfectly! In only a century, instrumentation



Photo: Jeff Scovil

has now advanced so far that not only can we determine the crystallographic structure of a mineral, but we can “see” the position of each atom within a crystalline structure. This lets us consider creating “designer minerals” to bring out specific behaviors/reactions as energy interacts with the crystal...opening a whole new range of technical advances. This has revitalized mineralogy as an academic science and Dr. Bob Downs's RRUFF Project at the University of Arizona is at the forefront of this revolution (You/TGMS helps advance this revolution by providing scholarships to the bright young scientists working with him!!!).

“Crystals and Crystals Forms”**By Peter Megaw ... CONTINUED**

Every basic mineralogy and mineral identification book has a section that describes basic crystallography...if you don't have one at home, there are dozens you can check out from the TGMS Library! You'll find the basics are pretty straightforward and with a little practice you'll be casually dropping polysyllabic bombs like **tetrahexahedral*** into your daily conversations.

All this of course will be of great use when you volunteer as a Docent with Ellen Alexander or help Les Presmyk with Competitive Exhibits. And most important you will never again be shy about talking to the museum curators or collectors for whom our Case Construction and Lining Crews, under Robert Crowell, Elaine Hughes and Jeannette Barnes' guidance, who work so hard. You may even find it helpful when working the Information Booth and a 10 year old asks **“where can I find the tetrahexahedrosaur?”**

Look it up...

14th ANNUAL MINERAL, FOSSIL, JEWELRY, ART AND CRAFT SALE

SATURDAY, DECEMBER 2, 2017 - 9:00 AM TO 4:00 PM

3727 E. BLACKLIDGE DRIVE

PRESENTED BY - TUCSON GEM AND MINERAL SOCIETY MEMBERS

CLICK HERE TO DOWNLOAD: [THE FLYER](#)



"The TGMS Christmas Party"

WHEN: Wednesday, December 13, 2017

WHERE: TGMS facility - 3727 E. Blacklidge Drive

WHAT TIME: Starting at 5:30 p.m., dinner at 6:30 p.m.

TGMS members pay \$5.00 and TGMS member invited guests \$10.00. This helps cover the expenses incurred in having a "GREAT" party. You can also contact the TGMS office and make reservations by calling 520.322.5773 or emailing tgms@tgms.org.

The deadline for signing up is December 8, 2017.

"Mark your calendars and come join the fun!"

Starting with the November 6th TGMS General Meeting ... we will have "Community Food Bank" and "Marine Toys for Tots" collection boxes available.

Please keep in mind those who are less fortunate and, if you can, bring a food item, a toy or even a monetary donation. It will all go towards helping someone or a family have a happier holiday.

Thank you!

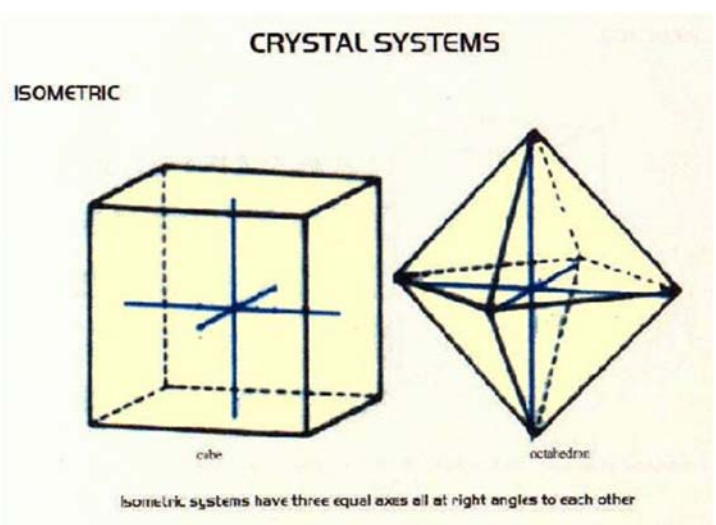
How Good Is Your Imagination? - Part 1

By Anna Domitrovic

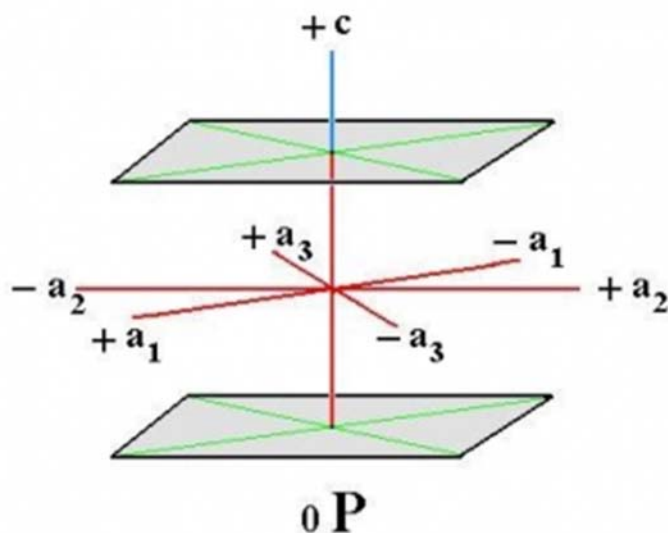
We'll be taking a look at the six crystal systems in this and the next issue of Rock Talk. But, unless you're a crystallographer, you'll need a good imagination to make sense of how crystals are put together and the way they look to the observer. The focus for this installment will be the isometric or cubic, the hexagonal and the tetragonal crystal systems. There is an order to the way the atoms of an element or compound congregate to form a geometric shape. Since that arrangement starts at the atomic level, you'll need to close your eyes and visualize that arrangement. But keep in mind as well, that the crystal forms we'll talk about are not as perfect as the models we've given you. Mother Nature has a habit of putting her own spin on crystallography.

Let's start with a relatively simple and common crystal in the isometric crystal system. Crystal forms are cubes (pyrite, halite), octahedrons (fluorite) and dodecahedrons (garnet), but there are many, many forms and subclasses. Ever hear of a *dyakisdodecahedron*. Well, it exists in the isometric crystal system. Let's go back to the ones mentioned previously. Picture a perfect cube. There are three imaginary lines called axes that intersect in the middle of the cube. Each axis is of equal length and at a 90 degree angle to one another. That is true for every form in the isometric crystal system. Some other minerals that are in this system include copper, gold and silver. How many more can you think of?

The models I've included to represent this crystal system are the cube and the octahedron.



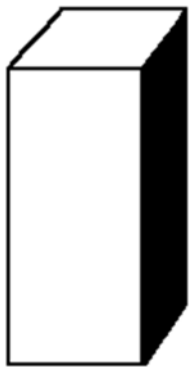
The **hexagonal crystal system** is the next one to take a look at. A form you may be familiar with includes prisms or barrel-shaped crystals (beryl, mimetite, vanadinite). Scalenes and rhombs (dogtooth calcite, rhodochrosite) are also forms common to this crystal system. Some crystallographers would like to take minerals like calcite and rhodochrosite out of the hexagonal system and put it in another similar one called trigonal, but for our purposes, we'll call them all hexagonal. Imagine four axes for this crystal system. Three of them are equal in length at 120 degree angles from one another. There's a fourth one, perpendicular to the other three and different in length. Some other minerals that crystallize in this system include bobsdownsite, corundum, fluorapatite and pyromorphite. Once again, how many more can you add to the list? You have a model for the hexagonal dipyramid and the rhombohedron.



How Good Is Your Imagination? - Part 1

By Anna Domitrovic ... CONTINUED

Tetragonal System



Tetragonal Prism



Dipyramid



Pyramid with Prism

Now let's look at the **tetragonal crystal system**. We're back to three axes. Two of them are equal in length and at right angles to one another. The third is perpendicular to the other two, but can be either shorter or longer. Crystals may look similar to those in the isometric system, but they are either stretched or compressed along that third axis. Arizona's state mineral, wulfenite, fits into this crystal system. Others include chalcopyrite, matlockite and scheelite. And the crystal models you have to work with are the tetragonal dipyramid and the tetragonal prism.

Well, I've really given your imagination a workout. I -hope that the diagrams and images help you to

understand what crystallographers are up against. As I said before, many of these crystal forms are not the ideal geometric shape. But practicing with actual mineral crystals is a good exercise in taking your imagination to reality. Give it a try! And stay tuned for Part 2 in the next issue of Rock Talk.



Cananea pyrite/Jeanne Broome photo

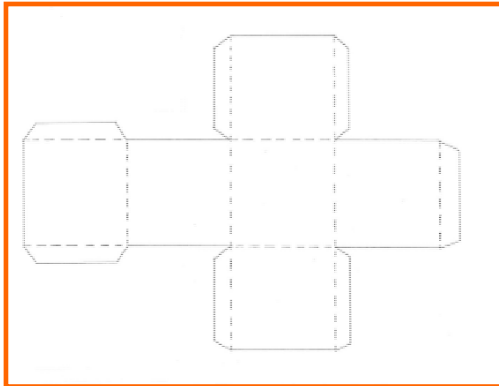


Old-Yuma vanadinite/Monica Graeme

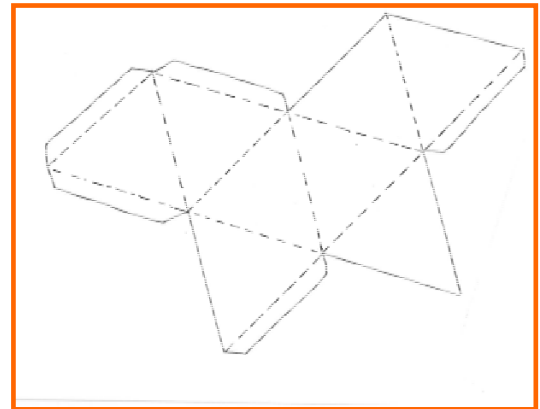


Hilltop wulfenite/Jeff Scovil photo

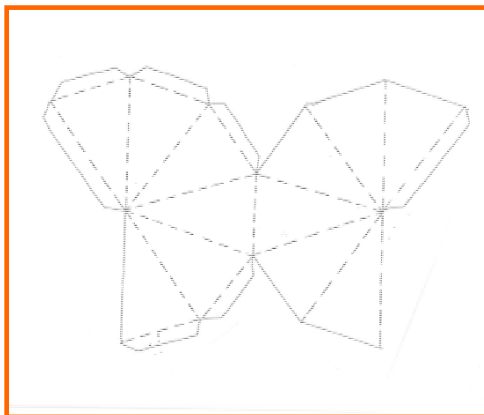
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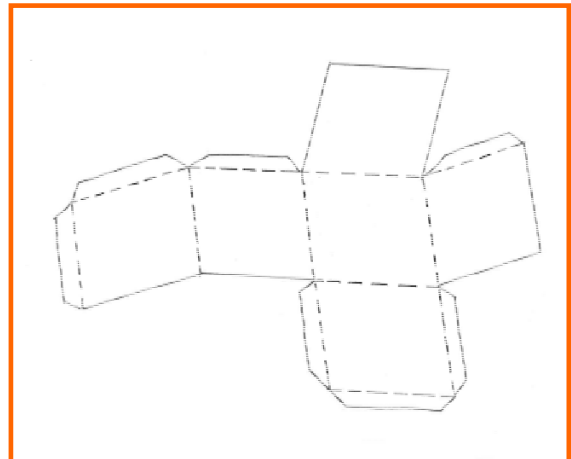
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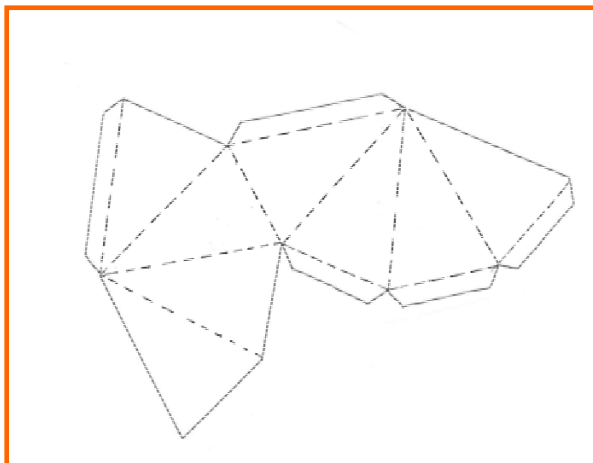
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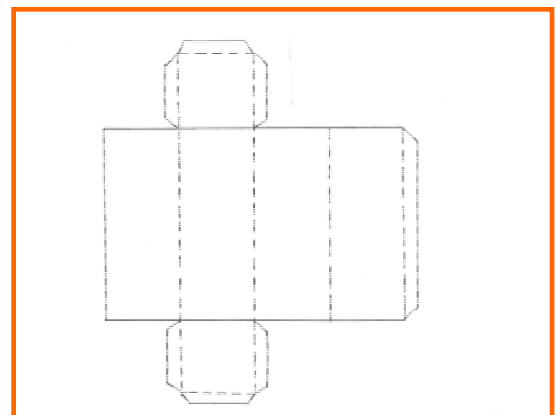
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Download - Ctrl & Click: [TETRAGONAL DIPYRAMID](#)



Download - Ctrl & Click: [TETRAGONAL PRISM](#)



TGMS Family Fun Day! -- Sat., Sept. 30, 2017 - By Pat McClain



At a TGMS Board meeting recently, the subject came up about community outreach programs. After tossing around several ideas, I came up with the suggestion of having a "Family Fun Day!" This would give us the opportunity to showcase to the Tucson community what the Tucson Gem and Mineral Society is all about, utilize all the wonderful talent that we have in our membership and maybe, just maybe we could actually get families to come to our facility and learn something about the earth sciences, all while having fun. I said to the Board that we could pull this off but only with their help ... well they really did!

After we had some TGMS members on board for the project, we had two or three meetings where we pulled all of our ideas together and we came up with a game plan. We decided to have a cave crawl, rock identification, mineral identification, microminerals and micromounts, mineral uses, rock dig, metal detecting, meteorites & meteor-wrongs, fossils & evolution, fluorescent minerals, gold panning and a rock crusher.

Everyone who volunteered to work on this project really came through in flying colors; they worked really hard on the areas that they had signed up to man. **Ron Gibbs** really deserves a special "thank you" because he is the one that brought our idea of "spin the wheel and win a prize" to fruition. He found a bike wheel, made the stand, painted all of the red and green dots and made sure that it was in balance so that everyone would have a fair chance to win a prize.

A BIG "thank you" to **Linda Oliver** for donating time, talent and material in helping us to put together our fluorescent tent. We had one little boy that was so fascinated with the fluorescent minerals, his mom had a very hard time getting him to go look at anything else. And "thank you" to **Kent** of Kent's Tools for donating all of the gold pans that we gave away. It made a lot of kids happy! A special "thank you" to **Gene & Jackie Schlepp**, who donated a wonderful group of mineral specimens. When it came to spinning the wheel and if it landed on a "gold TGMS logo," the kids got to choose from these very special prizes. You should have seen their faces when that happened!

We advertised in as many FREE online event calendars that we could, in hopes that we were getting the word out to everyone. Sometime before the doors opened on that Saturday, there were a few volunteers who were wondering if they were just going to be staring at each other for most of the day. We all let out a hoot when the first parent and child walked through the door right at 10:00 a.m. and the most wonderful thing happened ... they kept coming ... all day long! In a five-hour period we had close to 200 people walk through our doors. And the best part was that most of them were children!

Our volunteers were - **Marilyn Reynolds** and **Victoria Fila** manning the door, giving out mineral passport cards and raffle tickets. **Mary Kirpes** not only made the paper mache cave (with other volunteers), she was directing traffic all day; **Ortrud Schuh** manning the rock identification; **Bill Shelton** and **Jennifer Isbell** doing the mineral identification; **Ron Gibbs**, **Brad Gibbs**, **Mark Ascher** and **Tim McClain** focused on micro minerals; **Mark Marikos** explained the mineral uses; **Diane Braswell** kept the kids busy by helping them dig in the sand for all sorts of fun things; **Roy Parson** was in the dark all day long, he did the fluorescent mineral display, and helping him was **Beverly Lynch** who made sure that all the kids had their cards stamped (she was also very adept at directing the folks to our outside stations). **Mark Candee** handled the meteorite right and meteor-wrong table; **Christina Marikos**, **Kalen Krause** and **Wyatt Ingalls** did a great job with the fossils; **Louis Pill** and **Bob Melzer** had fun showing kids what you could do with a metal detector; **Kerry Towe** was out in the sun all day (even with the tent) explaining the fine art of gold panning; **Myles Ingalls** got to make some noise with his rock crusher; **Jerry and Mary Glazman** were in charge of "Spin The Wheel and Win A Prize"; **Bob and Jeannette Barnes** handled the sale of the snacks; **Mike Hollonbeck** and **Harry Lutzow** were our "grand gophers" for the day; **Rose Marques** and I did our best to make sure that the "details" were taken care of before, during and after.

TGMS Family Fun Day! -- Sat., Sept. 30, 2017 - By Pat McClain

I think it is safe to say ... "It was a success" ... and I am pretty sure that we will do it again. It truly was a "fun day!"

Comments we received on Facebook:

Lauren Rae Layton Ard - We had a LOT of fun at this event! Heard about it from Arizona Families and we are so glad we came! My kids are really, REALLY excited about their new rock collections and are even decorating special boxes to keep the rocks in, etc.

Larissa Kaliszewski - We had a great time, you guys put together an enjoyable event! Thank you!



TGMS Family Fun Day! -- Sat., Sept. 30, 2017 - By Pat McClain ... CONTINUED



Pictures by: Pat McClain

ROCK TALK

Encouraging the interest and study in geology, mineralogy, lapidary and allied earth science.

FROM:

T.G.M.S.
3727 E. BLACKLIDGE DRIVE
TUCSON, ARIZONA 85716



TO:

Tucson Gem and Mineral Society, Inc.

3727 E. Blacklidge Drive
Tucson, AZ 85716

Phone: 520-322-5773
Email: tgms@tgms.org

Website: www.tgms.org

Facebook: [Tucson Gem and Mineral Society](https://www.facebook.com/TucsonGemandMineralSociety)

Twitter: [@TGMSociety](https://twitter.com/TGMSociety)

YouTube: [TGMS Video](https://www.youtube.com/TGMSVideo)

PURPOSE: To encourage interest and study in geology, mineralogy, lapidary, and allied earth sciences.

Meetings: Usually the first Monday of the month, starting at 7:00 p.m., except September (second Monday because of the Labor Day holiday), June-August (potlucks). The TGMS facility address is: 3727 East Blacklidge Drive, Tucson, Arizona 85716

The Tucson Gem and Mineral Show ®:

The second full weekend in February, starting with Thursday.

Affiliations: American Federation of Mineralogical Societies, Inc. (AFMS), Rocky Mountain Federation of Mineralogical Societies (RMFMS), Visit Tucson, Tucson Metropolitan Chamber of Commerce (TMCC), Greater Oro Valley Chamber of Commerce

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