



The Pineywoods Rooter

Newsletter of
**PINE COUNTRY
GEM & MINERAL**

SOCIETY
of Deep East Texas

September 2013

Volume 21 Number 9

Page 1

Club Officers

President, Bill Talcott 384-8244
Vice President, Joe Griggs 381-1123
Secretary, Michelle Talcott 384-8244
Treasurer, Sharon Stalsby 382-5314

Membership & Publicity,
Jonetta Nash

Newsletter Editor

John D. Nash 737 FM 254 S
Jasper TX 75951-9580
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Member News, Michelle Talcott
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Membership

Club Membership is open to all who
are interested in the Earth Sciences
and the Lapidary arts.

Dues are \$24 yearly for families,
\$18 for single adults and \$2 for kids.

Meetings

The regular monthly meeting is held
on the third Thursday of every month
at 7 p.m. in the Club Building at 110
N.Zavalla St. in downtown Jasper.

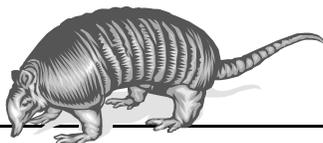
Visitors are invited to attend any of
the regularly scheduled meetings.

Club Purpose

Pine Country Gem & Mineral Society
was formed for the purpose of
encouraging interest and a better
understanding of all phases of the Earth
Sciences and Lapidary Arts and to
promote fellowship and cooperation
among members and with other
groups with like interests.

Member Club

South Central Federation of
Mineralogical Societies
and
American Federation of
Mineralogical Societies



FROM THE PRESIDENT

How do you spell success? Commitment and dedication is the only way. Way to go Ann for a very successful 2013 show, your guidance and planning made this the real success. This will probably go down as one of the best. Many thanks to each and every one who went the extra mile this year in planning and execution of the show. Those who work the kitchen the spinning wheel, the silent action, those out front and those who contributed when something was needed and let's not forget those who spent the day in the hot sun guiding the field trip and especially those of you that helped clean up. You did not have to have a lengthy conversation with the vendors to see that they saw the hard work put forth this year to make this a success. I visited with each and they all without an exception said they had a very good weekend and will be back next year. Now, how do we make next year's show even bigger and better? That will take some doing, but I think some are up to the task.

Now back to the normal world as we see it. This coming monthly meeting will be directed by Joe Griggs again, as I will be out on another rock hunting venture to get some rest and relaxation not so much from the show but from this year's grape harvest. It was hot and enduring and seemingly endless, but it's over for another year. I know there will be several out for this coming meeting, but those who can please make sure to attend.

Bill Talcott

**NEXT MEETING: Thursday, September 19, 2013
7:00 P.M.**

Club House at 110 North Zavalla, Jasper TX

PROGRAM: REVIEW OF 2013 SHOW

UP-COMING SHOWS &

SEPTEMBER 14-15 GRAPEVINE, TX
Arlington Gem & Mineral Soc.
Grapevine Convention Center

SEPTEMBER 21-22 DENISON, TEXAS
Texoma Rockhounds
Denison Senior Center

SEPTEMBER 28-29 MESQUITE, TEXAS
Dallas Gem & Mineral Society
Rodeo Center Exhibit Hall

OCTOBER 12-13 TEMPLE, TEXAS
Tri-City Gem & Mineral Society
Mayburn Civic Center 3303 N. 3rd
ddunn2199@yahoo.com
www.tricitygemmineral.org

ANNIVERSARIES

Ramona & Thomas Howell 9/12
Laurie & Scott Cordray 9/29

2013 Officers

PresidentBill Talcott
Vice President . . .Joe Griggs
SecretaryMichelle Talcott
TreasurerSharon Stalsby

Board Appointees

Activity - Field Trips . . . Fred Brown, Paul James
Membership - Publicity . . Jonetta Nash
Web Page . . . Sonja Richard
Programs . . Bill Talcott
Historian . . . OPEN
Auction . . . John Nash
Education . . . Janice Herron
Chamber of Commerce...Wanda Page
Show Chairperson . . .Ann James
Hostess...Donna Ducote
Building Chairman...Bill Talcott
Address Correspondence to:
Pine Country Gem & Mineral Society
P O Box 2513, Jasper TX 75951
CLUB WEB SITE: www.pinecountry-gms.org

BIRTHDAYS

Sonja Richard 9/1
Hank Halvorson 9/6
Charlotte Beebe 9/9
Roger Page 9/21
Linda Talcott 9/22

BIRTHSTONE FOR SEPTEMBER:

SAPPHIRE OR LAPIS

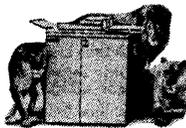
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Notice to Exchange Bulletin Editors:

You may reprint any article in this newsletter in non-commercial club publications, provided that credit is given to the author of the article copied and to the Pineywoods Rooter. Editor

Note the new web address-
www.pinecountry-gms.org
The web page is functioning
now.

Pine Country Gem & Mineral Society Meeting

Pine Country Gem and Mineral Society Meeting
P. O. Box 2513 – Jasper, Texas –

MINUTES FOR AUGUST 15, 2013



The PCG&MS met on August 15, 2013 at the club house for the regular monthly meeting. There were forty-three members attending.

The meeting was called to order by Bill Talcott. The business meeting began with a motion by Joe Griggs and a second by Ron Ducote to accept the minutes as recorded in the bulletin. The motion passed. The Treasurers report was given by Sharon Stalsby with a motion to accept by George Wells and seconded by Charlotte Beebe, the motion passed.

No program was presented so that the final details of the annual show could be discussed.

Committee reports were presented. Paul James (field trip) will try to get a trip planned this fall with Keith Stephens to collect petrified wood. Jonetta Nash (publicity) reported that the show information is out. Everyone needs to hand out post cards and get the word out. Rich Geist has a new display in the library. Sonya Richard (webpage) encouraged everyone to visit the new website, www.pinescountry-gms.org, to help move it up on on the search engines. She also said to like and share the show page on your Facebook page. Bill Talcott (building) had nothing new this month. Janice Herron (education) is leaving post cards at various places to advertise the show. Donna Ducoate (hostess) announced that September will be pot luck. Ann James (show) gave reports on the various committees for the show. Set-up will be at 10:00 a. m. Thursday. Charlotte Beebe will have her rock food table. Rich Geist will have a diorama display with fossils and animal models. Sharon and Charles Kerr will cook breakfast for the venders. Ron Ducote and Joe Griggs encouraged everyone to bring material for the silent auction and spinning

wheel.

In new business, the Board of Directors met and recommended buying a trailer for \$2000 to store the folding tables to free up space in the workroom. The motion was made by Jonetta Nash with a second by Paul James. By vote, the motion passed.

Winner of the half and half drawing of \$33 was Fred Brown and Ellis Clifton won the door prize drawing that was provided by Ann James.

On a motion by Sonya Richard and seconded by Joe Griggs, the meeting was adjourned.

Attendees at the Meeting: Zeb and Carmon Rike, Lonnie and Sharon Stalsby, Paul and Ann James, Bill and Linda Talcott, Michelle and Carter Talcott, Ron and Donna Ducote, Jody Dorman, John and Jonetta Nash, Fred and Janice Herron, Joe Griggs, Keith Stephens, Lori Horne, Tom Bailey, Maxine Wagner, Roger and Wanda Page, Ruth Howell, Tom and Ramona Howell, Chris Howell, Savannah Howell, Ron Carpenter, Charles and Sharon Kerr, Ellis Clifton, Charlotte Beebe, Sonya Richard, Desiree Richard, George and Martha Wells, Fred Brown, Rich Geist, Paula Ewing, Shari Gunter, and Ron Bradley.

Submitted by Michelle Talcott, Secretary

REMEMBER— THERE IS NO POT-LUCK SUPPER AT THIS THURSDAY'S MEETING DUE TO THE NUMBER OF PEOPLE ABSENT. JUST COOKIES, CAKE, AND COFFEE. QUESTIONS?—CALL JOE GRIGGS.

A NOTE FROM JOE ABOUT THE SHOW

This was only my second year to be part of the club and help with our show and I am still amazed how everyone had their things to do and how well they accomplished their tasks. Last year I was a floater and this year I worked the spinning wheel, with help from Michelle and Rich, and had a blast. With Rich's generous gift of the small geodes and cutting them, the kids had a ball. I may have been overly generous with some prizes but I don't know of anyone that left unhappy and several parents and grandparents slipped back to tell us thank you. We have a wonderful club made up of wonderful people and we need to encourage more people to share.

Joe Griggs

PUBLICITY

The 19th Annual PCGMS Show is now history and I think it was one of our best. In fact, I think they get better every year. I just wanted to share some of my experiences from the best seat in the house – the front desk. This has been my spot for a long time now and I guess I am a mite possessive. Of course Wanda and Roger Page and John were my designated partners this year (and any other folks we could snag to cover for us when took a break). After serving as publicity chairman, I could not help but ask everyone about whether this was their first time to attend the show and how they heard about it. The most surprising things to me were the number of “newcomers” attending and also the number of people who live in Jasper and said they did not know we had a club here and knew nothing of our show! Where are we missing out on publicity? It was rewarding to hear many say they had picked up one of our post cards from displays in area stores and post offices, etc. I guess our road trips were successful for more than a nice drive and a good lunch. It was great to have the TV stations in Lufkin and Beaumont cover the show. Hopefully next year they will be able to come on Friday or Saturday to get the word out early.

It gets a little wild at the front desk: trying to be sure everyone registers so they can be on the mailing list

for next year; collect their admission fee; encourage students to register for the Tumbler Kit; offer raffle tickets for the Grand Prize; let folks know our Rock Food Table has not disappeared but is inside by the kitchen; remind them of all the good food we are offering including the fish dinners outside; and don't forget our outside vendors with a mining sluice and in the middle of all this – there is Rich with his A Bite In Time that has everyone's attention. And by the way – watch that step at the door!

Like I said – a little wild but a lot of fun. It's good to visit with those folks who return each year and hear the comments from the folks who had no idea what to expect at a “rock” show but vow to be back next year.

Some of the most enjoyable times for me are before the show opens and after hours. I get to visit with our vendors, most of who have been a part of our show for many years and are like family to us. This is when I get to shop. Then we have time to enjoy our own club members as we relax and exchange stories about our experiences of the day. We compare our aches and pains and get ready for the real of work of pack up, clean up and think about how to make next year bigger and better.

I want to thank each of our members for all the work you did to make this a great show. I know Word of Mouth is the best advertisement and I thank you for that.

What great ideas do you have for our 20th Anniversary Show?

Jonetta Nash,
Publicity Chairman

ANOTHER OLD-TIMER GONE

A long-time member of PCGMS passed away on February 24, 2013. The older members remember Barney Bump and his devotion to the Club. He and wife, Barbara, made club meetings after driving from Plantersville, and then back again that night. Barney set up a “spinning wheel” at the club shows with proceeds going to the club. Barney will be missed.

The Annual Show and the PCGMS Team

by Ann James

Well, another show has come and gone and it truly was a great one in all aspects. The feedback given by those attending, vendors and field trip attendees was really exciting. All were highly complementary of the PCGMS team. The comments addressed many aspects of the show but the common thread in all of them addressed the overall kindness, generosity and welcoming nature of our club members. I am hoping to share some of these emails at the next meeting that I will be attending.

It seems that every year there are things added to the venue that attracts a larger and larger crowd and this year was no exception. New items of interest included Rich Geist's amazing Fossil Tooth exhibit. How wonderful that one of our own members has created a "traveling exhibit" and showcases it at our show. Of course, we are fortunate that another fellow member, Charlotte Beebe, has a rock food table exhibit. Charlotte continuously adds new "items" to her table and this year was no exception. We also had new dealers with interesting material in addition to our "oldies but goodies". And how about the portable mining sluice? I'm still running into people that had a fantastic time "gem mining". They are so anxious to share their stories as to what they found and how they are spreading the word about our show.

The overall coverage of the show was tremendous. Rich Geist did the PSA on the Lufkin radio station while Vance Beaver covered the interview with the Leesville station. Sharon Kerr wrote a feature story on the show and club for The East Texas Quarterly. For the first time, two television stations made their appearance at the show - KTRE out of Lufkin and Channel 6/Fox News out of Beaumont. Of course, as always, Jonetta Nash thoroughly covered numerous statewide publications.

Two recent additions to our show continue to get rave reviews and fabulous comments. Charles and Sharon Kerr prepare a fabulous "French Toast" breakfast with all the trimmings. The vendors talk about it at other shows throughout the year. It is a

real treat and they put on a good show as well. Also there is much ado about the "Petrified Wood" field trip hosted by members Keith Stephens, Ron Carpenter and Lori Horne. These three are also "master naturalists" and incorporate their knowledge of the natural habitat along with the collecting. They have certainly made a name for themselves (and PCGMS) as the trip filled to capacity in less than a weeks time. BTW, Lori has volunteered to chair the field trip for next year's show. Thank you, Lori.

As Show Chair, there are so many people to whom I would like to extend "Special Thanks" -each committee chair: Publicity - Jonetta Nash; Kitchen/Vendors Meal - Sonja Richard; Spinning Wheel - Joe Griggs; and Silent Auction- Ron and Donna Ducote; and T-shirts/mugs- Michelle Talcott. Each and everyone of them took full responsibility and did a fantastic job in their area. Also, there is one individual that goes unnoticed most of the time and that is Sharon Stalsby, our Treasurer. Despite the fact that she is busy with her own booth, she very cheerfully takes care of all financial concerns -and believe me there are many before, during and after the show. Many thanks to the set-up crew and break down crew. Many thanks to all of the volunteers. Many thanks for all of the donations by club members for the kitchen, silent auction, spinning wheel and door prizes. Thank you Fred and Janice Herron for making our fabulous grand prize affordable. It is my understanding that each committee chair will be acknowledging all who worked on their committees. I guess it is easy to see that the entire club membership is the PCGMS Team. I will say that I am honored and proud to be member of such an amazing group of people who are so willing to offer what they can for the good of the whole. That is team work.

It was a difficult task to step into the role of Show Chair as Lonnie has done such an excellent job for the past several years. But with his help as well as the help of each member of the PCGMS Team (the Club), we were able to pull it off again.

In sitting to write about my experience as "Show Chair", there was much to think about. It seems that my role in the show activities just seems to be that of continuous change. For many years I participated as a

dealer. Then about four years ago I decided to forego selling and actively participate in the show as a member, so I offered to chair the "kitchen committee". Last year brought about another change which meant giving up the kitchen to work on the preparations associated with hosting the SCFMS Annual Meeting/Awards Banquet/Editor's Breakfast. It is always a lot of work and planning, but truly is a lot of fun. How can it not be when you're part of the PCGMS Team !!!

Until next year

LIMESTONE

Jody Dorman

Limestone is composed mainly of calcite. And, limestone is abundant, and occurs in thick, extensive, multiple layers.

Limestone generally forms in warm, shallow seas from the precipitation of calcium carbonate from sea water of the accumulation of the shells and skeletons of calcareous marine organisms. Limestones texture ranges from coarse and fossil-rich to fine and micritic. Some limestones are very compact, while others are grainy or friable. Many have sedimentary structures such as cross bedding and ripple marks. Limestone is very important commercially and has a number of different uses; such as a building stone; when burned to form lime for cement; as a raw material in the manufacture of glass; as a flux in metallurgical process; and in agriculture. Because calcite dissolves in acidic water, limestone facades, gravestones, and other structures weathers very quickly, especially in cities. Solution caves are generally formed by dissolution of limestone. Limestone contains calcium carbonate which is slightly soluble in the weak acid known as carbonic acid (H_2CO_3) which is formed as carbon dioxide and it dissolves in ground water. This acidic water percolates down through the overlying soils. Some collects in sinkholes that are already dissolved out of the underlying limestone or dolomite, and some trickles down through the cracks of the rock. Limestone makes up about 10% of the total volume of all sedimentary rocks.

Source: Smithsonian Rock and Gem Book

Tetrahedron

Zeb William Rike III

Close to sixty years ago I learned that the tetrahedral bond angle was $109^\circ 28'$. I assumed it required solid geometry and it was too difficult for me. Recently, it occurred to me that by drawing a plane through the center and two vertices, we have a simple plane triangle; indeed my first Organic Chemistry text had shown how the angle is calculated.⁽¹⁾

Why do we care? In a Diamond crystal, every carbon atom is connected by covalent bonds to four other carbon atoms, in a tetrahedral orientation throughout the crystal. And in Quartz and all of the silicates, the silicon ion is in the middle of a tetrahedron with an oxygen ion at each corner, the so-called "Silicate Tetrahedron". One of the hardest, most precious gems is based on the tetrahedron, as well as the most common earth-forming minerals.⁽²⁾

A tetrahedron is a simple three-dimensional solid with each of the four faces an equilateral triangle, as in Figure 1.

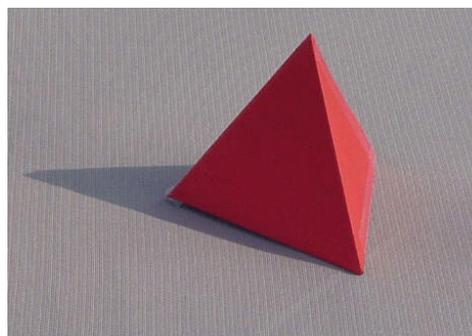


FIGURE 1—A Tetrahedron

If we examine a drawing of a cube, (Figure 2) we see that the tetrahedron can be drawn inside. This drawing will allow us to understand the tetrahedron. In my drawings, I have *points* labeled with *numbers and letters*—as $[I]$ or $[A]$, lines labeled as $[AC]$ and angles as $[ABC]$.

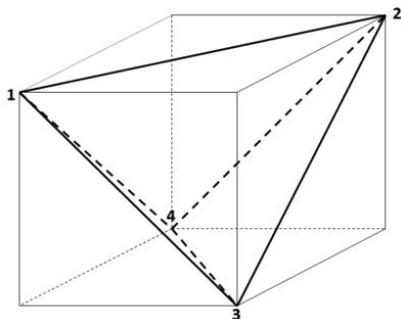


FIGURE 2—Tetrahedron in Cube

In Figure 2 we see that one edge of the tetrahedron will go from back left to front right corners of the lower face [43]. Another will go from front left to back right corners of the upper face.[12] It is easy to draw in the other four edges. These will be [14], [13], [24] and [23]. The center of the cube and center of the tetrahedron coincide.

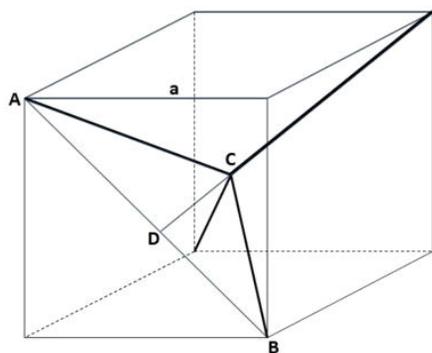


FIGURE 3—Tetrahedral Angle

Figure 3 shows lines from the center to each corner of the tetrahedron. Point [C] is the center of the cube (and of the tetrahedron), [A] and [B] are two corners of the tetrahedron. Point [D] is the center point of the diagonal [AB] of the cube (also edge of the tetrahedron). Lines [AC] and [BC] are equal in length. Angle [ACB] is the tetrahedral bond angle. The line [CD] is one side of a right triangle with angle [ACD] being 1/2 the tetrahedral bond angle. ⁽¹⁾

$$AB = \sqrt{2}$$

$$AD = (1/2)\sqrt{2}$$

$$CD = 1/2$$

$$\tan(\text{Angle } ACB) = AD/CD = (1/2)\sqrt{2}/(1/2) = \sqrt{2} = 1.41414$$

$$ACB/2 = 54^{\circ}44' \text{ so } ABC = 108^{\circ}88' = 109^{\circ}28'$$

The same applies to each of the Tetrahedral angles. After looking at the old textbook and seeing how they derived the angle, I realized that I had come up with a different scheme that (OF COURSE) gave the same angle.

Let us now look in Figure 4 at the structure of some tetrahedral groupings of interest to Rock and Mineral enthusiasts.

In a Diamond crystal, a Carbon atom resides at each corner of the tetrahedron with the corner-to-corner distance being the Carbon-Carbon bond distance. In a Silicate Tetrahedron, an O⁻² ion is at each vertex with the Si⁺⁴ at the very center in the “hole” between the O⁻² ions.

The length of any edge of the cube is 1.0 Units. The length of any edge of the tetrahedron will be $\sqrt{2}$ so radius of the oxygen atom will be $1/2 \sqrt{2}$. (Remember: “The length of a hypotenuse is equal to the Square Root of the sum of the squares of the other two sides”)

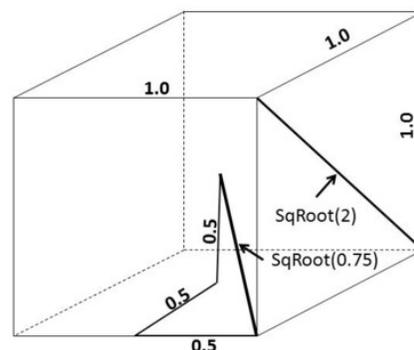


FIGURE 4

The distance from any vertex of the tetrahedron to the center will be:

$$R = \sqrt{0.5^2 + 0.5^2 + 0.5^2} = \sqrt{0.75}$$

So radius of small sphere in center of Tetrahedron touching (“the hole”) the surfaces of the oxygen spheres centered on vertices will be:

$\sqrt{0.75} - \frac{1}{2} \sqrt{2} = 0.15892$ unit while the radius of the Oxygen ion will be 0.70711, so ratio of radius of the Oxygen to silicon is 4.45.

The ratio of the ionic size of oxygen to silicon ions is something in the order of 3.5, depending on tabulated values used. (3) So we can see that the Silicate Tetrahedra is so stable because the size of the Si^{+4} fills the ‘hole’ in the middle of the tetrahedron of O^{2-} s.

A model uses a triangle of tennis balls (representing three Oxygen ions) with an antique clay marble to represent the Silicon ion. The fourth tennis ball ‘Oxygen’ setting on the other three completes the tetrahedron, enclosing the ‘Silicon’.



Now for some “Geometrical Trivia”: The Tetrahedron is one of the five “Platonic Solids”, named for the Greek philosopher Plato and were regular geometric convex polyhedrons with the faces being congruent regular polygons with the same number of

faces meeting at each vertex. Three of them had equilateral triangular faces: the Tetrahedron had four faces, the Octahedron had eight and the Icosahedron had twenty. The cube had square faces while the dodecahedron had twelve regular pentagonal faces.⁽⁴⁾

Be careful what “expert” you believe. **Aristotle** taught that the Tetrahedron was a “space-filling solid”. (5) Several other philosophers through the centuries questioned this but assumed that they must have made a mistake themselves; it took 1800 years for a ‘correction’ to his teaching to be published and accepted. It is easy to see in hindsight. For the Tetrahedron to be a space-filling solid, (among other things) the angle between two faces would have to be exactly 72 degrees, while it calculates $70^{\circ}32'$.

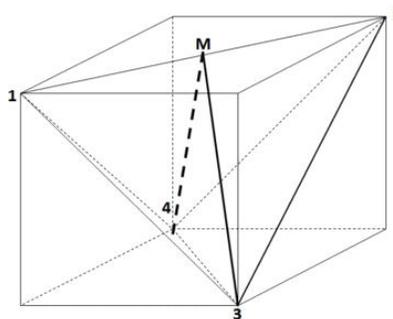


FIGURE 5

In Figure 5, the angle is [4M3], easily calculated from the drawings of the tetrahedron in a cube; I will leave the simple calculations to the reader. (Hint: ‘side-side-side’ formula). Aristotle was wrong—five tetrahedra joined at one edge indeed give a small gap.

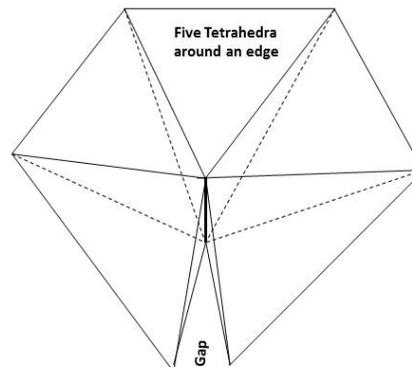


FIGURE 6

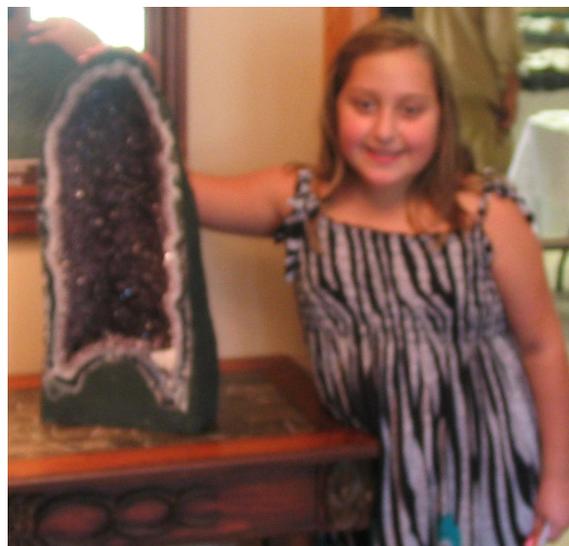
And why are we interested in ‘space filling solids’? The “Unit Cells” in crystals are by definition ‘space filling solids’ but with definite requirements of their own. **“Keep Tuned Right Here”** for a subsequent article on the “Unit cells” where we will look at cubic, orthorhombic, hexagonal, etc.

FOOTNOTES

1. **ORGANIC CHEMISTRY, 2nd. Ed.** Ray Q. Brewster, Ph.D., Prentice-Hall, Inc., Englewood Cliffs, NJ., 1956, P. 743, 744.
2. **MINERALOGY**, John Sinkankas, Van Nostrand Reinhold Company, New York, 1964, pp. 55, 56.
3. http://www.webelements.com/atom_sizes.html
4. http://en.wikipedia.org/wiki/Platonic_solid
5. “Mysteries in Packing Regular Tetrahedra”, <http://www.ams.org/notices/201211/rtx121101540p.pdf>

CLUB MEMBERS ON THE ROAD AGAIN

John Nash, President of the SCFMS and AnnJames, Third Regional Vice President, together with their spouses, Jonetta and Paul, will be traveling to Jacksonville, Florida for the Annual Meeting of the American Federation. As President of the SCFMS, John serves on the Board of Directors of the AFMS and Ann is an elected officers.

THE GRAND DOOR PRIZE WINNER

Breanna Bussinger, 9 years old of Beaumont, Texas was the winner of the grand prize Amethyst Geode at the 19th Annual Pine Country Gem & Mineral Show in Jasper. The Bussingers heard about the show when they were on a trip to visit relatives earlier this month and stopped at Janice and Fred's rock shop in Kirbyville.

Breanna's Mom and Granddad made plans to bring Breanna to her first Rock Show and she was the lucky winner. Amethyst just happens to be this very happy little girls birthstone.

Members Happenings

By Michelle Talcott

The annual show was a great success with a large attendance. It is always enjoyable to see all of the “extended family.”

Lonnie and Sharon Stalsby, Ron and Donna Ducote, and Bill and Linda Talcott took off for a rock hounding excursion to New Mexico. I am sure they will find many treasures to bring back to show everyone.