

ROCK TALK

Volume 15, Issue 5
May - June

2020 - 2021 Officers & Directors

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**EXPLORE
DISCOVER
SHARE**

TUCSON GEM & MINERAL SOCIETY

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PRESIDENT'S PAGE

EXPLORE DISCOVER SHARE



We have awarded scholarships to four very deserving UofA students. Sixteen students applied and this made the selection even more difficult. The UofA does attract the best and brightest in the fields of geology, mining engineering and the environmental sciences. In addition, the 4th Edition of the Mineralogy of Arizona is in the final throes of being readied for publishing and hopefully it will premier at our Show in 2022. The UofA Press and the authors are soliciting funds to help offset the cost of color photographs and printing, just as they did with the 3rd Edition in the early nineties. This increases the number of color photos and helps to keep the retail cost as low as possible. While TGMS is not in a position to support this like was done in 1991, this is truly an example of

furthering the educational portion of our purpose and the Board voted to support this effort.

As I talked with the few collectors and dealers involved at the Mineral City complex (Oracle and Lester/Plata Streets) I interacted with, the question I was asked almost universally was "Is there going to be a 2022 Tucson Show?" To which, I answered a very enthusiastic YES! I explained the Show theme will be The Show That Glows, featuring the Apatite Supergroup and a special exhibit by the Fluorescent Mineral Society (Apatite, Vanadinite, Mimetite and Pyromorphite) and most importantly, the planning was already well underway to make it the best show ever (certainly our on-going goal).

The goal for the Fluorescent Mineral Pavilion will be to bring in over 80 displays of the best collections from all over the country. Many of these have never been out on public display. We all know how beautiful specimens can become when subjected to ultraviolet light. For those of us who prefer to see the beauty of our specimens under daylight or regular lights, visitors will be rewarded with the multiple and beautiful reds, yellows, greens, orange, and purples of the Apatite Supergroup mineral. Arizona should be well represented considering the numerous vanadinite and mimetite localities we have in our state.

By the time you read this you should have already received information about the Society budget for the 2021/2022 (or just FY22) year. This budget has been reviewed by the TGMS Board and recommended to the general membership for approval. With the carryover from this year's budget and some monies out of the rainy day fund, we are set to make it through this coming year in good shape. With the expectation of a great 2022 Show, our finances will be back to a more normal standpoint next year with most of our reserve funds intact.

You will also be receiving the recommendations from the nominating committee, headed up by Mark Marikos. Because of the pandemic, this process has been changed a bit from past practices. We now are sending out the preliminary list of nominees with the request to all of you to review the list and let us know if there is someone you think should be added. In the email, an email hyperlink has been set up for you to use; once opened, follow the instructions and, when you are ready, click on Send and your email will be returned to Pat McClain. This will take a week. Then the nominations will be closed and voting will begin for another week.

I am honored Mike Hollonbeck has asked me to be the speaker for the May meeting. As noted in my brief summary, I will be talking about the quartz specimens and localities in Arizona. Several years ago, I invited Pat MaMahon to speak on agates and he highlighted a number of the localities in our state. While I will touch on a very few of

President's Page - CONTINUED

these occurrences, my emphasis will be on crystallized specimens. I hope you will enjoy seeing some of Arizona's quartz specimens.

Last month I stated we would be asking you to approve the current set of Bylaws revisions as approved by the Board. As Pat and I looked at the Bylaws, and with her discussions with the attorney, we realized there are some areas needing some additional work. So, for the next couple of Board meetings one of the issues we will be working on is finalizing these revisions with the expectation of getting this out to a vote of the membership during the summer.

Finally, as shows start to open up, and we start to think about doing more socializing, do not relax your diligence regarding COVID-19 and the pandemic. I continue to wear my mask in public and carry and use hand sanitizer when I go out. Paula and I continue to wipe down groceries and other items I bring home (okay, certainly not the sheet of plywood for that next home project but it stays outside anyway). Until vaccination levels reach at least 80%, and preferably 90%, we are all at some risk, even if you have had COVID-19 or gotten the vaccine. As I have said in the past, the science will serve you best. Our political leaders have their personal and professional agendas, which do not always align with the science. Just keep yourselves informed and stay safe. I continue to remember a billboard around Eloy I would pass twice each day when working at the new UofA Alfie Norville Gem and Mineral Museum that stated, "My mask protects you and your mask protects me."

Les Presmyk
TGMS President

TGMS General Meeting - March 1, 2021

The General Meeting of the Tucson Gem and Mineral Society was called to order by President Les Presmyk at 6:04 p.m. The meeting was held via Zoom due to the current COVID-19 Pandemic.

ANNOUNCEMENTS: The President announced that Pat and Rose were working hard towards the 2022 Show. Previous minutes will be published in Rock Talk for approval in the April General meeting. A Board meeting is scheduled for later this week.

PROGRAM: Mike Hollonbeck introduced Rob Bergmann from Big Rock Minerals who presented *“Explore & Discover: A New Eyes on Old Rocks Approach to Targeting Rhodochrosite Specimens, Sara Rose Mine, Alma, Colorado, USA”*.

Mr. Bergmann explained the modern life cycle for opening mineral and mining projects. Projects begin with exploration strategies using modern technology. Both historical and current records and data are compiled and studied. Based on the results of the study, criteria are established to determine which mineral deposits are most favorable for discovery. Then using “Boots on the Ground” more information is gathered. Deposits are then mapped, and an advanced model of the prospective mine is generated. Mr. Bergmann explained how each of these steps were applied to the successful reopening of the historic Sara Rose Mine in Park County Colorado. The Mine was opened with modern compliance and yields extraordinary Rhodochrosite specimens. The talk was concluded with photographs of specimens from early pockets of the mine. He also had photos of his family of miners, the original miner's cabin, ore cars and the beautiful Colorado mountains.

NEW BUSINESS:

The next meeting will be on April 5, 2021.

The meeting was adjourned at 8:00 p.m.

Respectfully submitted,
Linda Ross,
Recording Secretary



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TGMS General Meeting - April 5, 2021

The General Meeting of the Tucson Gem and Mineral Society was called to order by President Les Presmyk at 6:02 p.m. The meeting was held via Zoom due to the current COVID-19 Pandemic. The President welcomed a new guest and encouraged her to join TGMS.

ANNOUNCEMENTS:

TGMS has books for sale "The 100 – A Practical Guide to Mineral Collecting in Today's World" by Bill Shelton for \$15.00 each. Proceeds go to the TGMS library fund.

TGMS has 4 ply face masks for sale at \$3.00 a mask. They can be purchased at the TGMS office.

PROGRAM: Tom Kaye presented an exciting and engaging program titled "Laser Stimulated Fluorescence from Earth to Mars." He explained how using lasers to expose fluorescent materials provides additional data important to earth sciences. The fluorescence on cave walls reveals the geochemistry and history of the cave, the fluorescence on fossil plates reveals the soft tissues of dinosaurs, and nighttime fluorescence of quarries exposes both fossils and minerals. The addition of a laser to a Mars drone could reveal data on the past life on Mars! The audience had many questions for Tom and were appreciative of his interesting talk. The audience was particularly interested in his topic as the theme for the 2022 TGMS Show is "The Show That Glows."

OLD BUSINESS:

Approval of the following General Meeting minutes published in the combined issue of the January/February/March/April 2021 issue of Rock Talk:

MOTION: To approve the November 9, 2020 General Meeting minutes. Seconded and approved.

MOTION: To approve the December 7, 2020 General Meeting minutes. Seconded and approved.

MOTION: To approve the January 4, 2021 General Meeting minutes. Seconded and approved.

MOTION: To approve the February 8, 2021 General Meeting minutes. Seconded and approved.

Educational Zoom Class: Bill Shelton will lead a Zoom class "Giant Crystals" on April 14 at 7:00 p.m. Members will be sent a link; nonmembers can contact the TGMS office at tgms@tgms.org for the link.

Virtual Show: TheRock.show is a virtual mineral, gem, fossil, and lapidary show that will be open from April 10th through April 18. Use the URL - TheRock.show to visit with dealers, other societies, and club members from the comfort of your home. Visit www.tgms.org for more information.

NEW BUSINESS:

Approval to hold the 2022 TGMS Show. **MOTION:** to hold the 2022 TGMS Show. Seconded and approved.

The meeting was adjourned at 7:13 p.m.

Respectfully submitted,
Linda Ross,
Recording Secretary



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TGMS has masks for sale ... Black or Blue with the TGMS logo in the middle. They are four ply cotton and we are selling them for \$3.00 each.

Contact the Office at 520-322-5773 or tgms@tgms.org if you'd like to pick up a couple!

TGMS Board Meeting - March 3, 2021

Board Members Present: Ellen Alexander, Diane Braswell, Mark Candee, Michael Hollonbeck, Mark Marikos, Les Presmyk, Marilyn Reynolds and Linda Ross.

Absent: Bill Shelton

Executive Manager: Pat McClain

Parliamentarian: Alrene Hibben

Audience: (none in attendance)

Call to Order: The Board Meeting was called to order by President Les Presmyk at 2:05 p.m. via Zoom. A Zoom conference was held due to the ongoing COVID-19 Pandemic.

President's Remarks: The President welcomed the Board members and was pleased that members are healthy and making progress on getting COVID vaccines. The UA Alfie Norville Gem and Mineral Museum will have the cases ready soon but will delay opening to the public until September or October. Previews of the Museum may be open to small groups before the public opening.

Minutes Approval: **MOTION:** To approve the November 20, 2020 Board Meeting Minutes as written. Seconded and approved.

Treasurer's Report: The Treasurer reported that despite the COVID-19 Pandemic, TGMS is financially sound.

Old Business: Review of TGMS facility repairs: The swamp coolers have been removed from the roof of the building, improving the heating and ventilation of the building. Future maintenance items include cleaning the carpets and repairing fascia. In the next fiscal year budget, building funds will be allocated for upgrading lighting to LED.

New Business: TGMS Volunteer of the Year Award: Board discussed implementing a Volunteer of the Year Award. The Board will look at the criteria, evaluation and nomination procedures used by similar volunteer organizations that recognize members for their service. It was noted that the Founder's Award was previously presented to TGMS members, based on their contributions to the Society and Show, and promoting science to the public.

Request of approval for a 2022 TGMS Show Budget (minimal): Due to the nature of the TGMS Show, invoices are received (in May) after the current Show concludes while payments (such as publicity), for the next Show are due in March. The budget for the next Show cannot be written until the current Show is reconciled. The Executive Manager requested approval for funds for the 2022 Show before the 2022 Budget is written and approved. **MOTION** to approve using \$10,000 of the \$40,000 from the tentative 2021 Show Budget to cover expenses already due for the 2022 Show. Seconded and approved.

Scholarship Update: The Executive Manager is working with the University of Arizona to promote the TGMS scholarship to potential applicants.

Nominating Committee: Nominations for the 2021-2022 Board need to be published ten days before the May meeting. The Committee needs to present their nominations in the April Board meeting.

TGMS Show Co-Chairs for 2022 Show: **MOTION:** To approve Peter Megaw and Dick Gottfried to continue as Show Co-Chairs for the 2022 Show. Seconded and approved.

Stipends for Lecturers: Board member proposed providing stipends for lecturers conducting classes for TGMS members. **MOTION:** To provide a \$300 stipend for the presenter of each educational class. Motion was seconded. Currently, there is a line item for educational expenses in the budget; the Board questioned if a volunteer should be paid for volunteering. The Motion was not approved. However, there could be a more formal discussion on offering a stipend if TGMS solicits a speaker for a special topic. The proposal can be revisited in the future.

Next Board Meeting: The Board agreed to meet again by Zoom, on Wednesday, April 21st, at 2:30 p.m.

Adjourn Meeting: Meeting was adjourned at 3:21 p.m.

Respectfully submitted by:

Linda Ross

Recording Secretary

“Ever wondered what” - By Ellen Alexander

Ever wondered what it's been like at the Clubhouse during the Covid-19 time? TGMS keeps going no matter what.

After a number of weeks working from home, Pat and Rose moved back to the Clubhouse. They set up a protocol that would allow them to work in the building at the same time. And they were careful to include two other people—the Membership Secretary and the Treasurer [that's me]. Since our Membership Secretary needed to come into the office, Pat created a space in the back of the meeting room for her, so she'd be safe and able to process memberships. TGMSers look out for each other. Here's what that looks like.

Early each Friday morning, I would come to the Clubhouse, open the gate, enter the building, and head for my desk. Just as on our Membership Secretary's desk, on my desk there would be a bottle of Purell that was kept filled and a container of Lysol wipes. I'd disinfect my keyboard and everything else I needed to keep me safe, a procedure I'd go through again just before I left so whoever might use my desk after me would be protected. TGMSers protect each other.



On my desk I would also find a stack of authorizations for payment, so I'd take care of them, checking them, entering them, printing the checks, recording them, and readying them for outgoing mail which Pat would take care of later in the day. Pat and Rose would make sure to come in later on Fridays so we didn't overlap. Here's me this past winter.

So that's what's been going on in the Clubhouse.

What's been going on in the Club? You already know that. All you have to do is check your emails with all those notifications of meetings and connections to all sorts of things. Pat and Rose have done a great job keeping us connected. Looking forward to seeing you all in the Clubhouse!

Ellen Alexander,
Society Treasurer

From a financial standpoint the Society is doing just fine. At the start of the year, the Show Committee had given us a check for the bulk of the net profit from the 2020 Show, so we started the year having received most of the funds we were counting on for income this year. As the year progressed and the likelihood of our having a 2021 Show diminished, the Board met to discuss finances. We already had an approved budget. What could we eliminate or reduce in our spending? As of today, we have spent nearly \$30,000 less than we had last year at this point. Added to the carryforward from last year, this will help with next year's budget. Given that we will not have Show profit from a 2021 Show handed to us this July, it was good news to recognize that we do have this additional carryforward money to put towards next year's income. What that does is to reduce the amount we may have to dip into our Rainy Day Fund to get through the 2021-2022 year. Remember the Rainy Day Fund? Over the years we've set aside money just in case we hit a rainy day. So here we are facing a rainy day. And thanks to a wise membership and a number of previous Boards with foresight, we are prepared!

Skarn Garnet - By Bill Shelton



Andradite - Locality: Antetetzambato (Tetezambato), [Ambanja District, Diana \(Northern\) Region, Antsiranana Province, Madagascar \(Locality at mindat.org\)](#) - Source: Image: http://www.irocks.com/db_pics/new2010/dem35c.jpg Description: <http://www.irocks.com/render.html?species=Andradite&page=3> - Author: **Robert M. Lavinsky**

The metamorphic regime regarding rocks includes at least a dozen relatively common types – all with their own names. Here, we will discuss only one type - that would be skarn. Most common skarns are the result of metamorphic activity involving a previous sedimentary rock that is rich in calcite, dolomite or perhaps some of each, these carbonate predecessors all are likely to produce an end product that contains the minerals calcite and/or dolomite. As the temperature increases, we are likely to find additional species including quartz and talc. Even more heat will yield tremolite and eventually diopside. At extreme temperatures, we may find forsterite and wollastonite.

There is a common practice of labeling a skarn with a mineral prefix when one species seems to be particularly evident. An example, pertinent to this article would be andradite skarn. In this rock type, the major mineral or perhaps just very common, will be andradite, a garnet that has been labeled as “common garnet” many times. If you know the deposit Dalnegorsk in Russia, you are aware of one huge skarn already. According to the source World of Stones, 1994, the rock may be called datolite – wollastonite – hedenbergite skarn and examples I have seen show variability and may have one or all or these species present in an actual sample. The article has a mineral list which

includes garnet (andradite-grossular). Elsewhere, there are statements that suggest the garnet from here is andradite albeit with a grossular component that may be up to 30 or so per cent of the total. Using standard procedures, we will label this mineral andradite.

A little closer to Arizona, the garnet from Stanley Butte has been described as andradite. (See Mineralogy of Arizona, 1977 for example.) The color is somewhat brown with yellow and green hues that may cause the individual example to look somewhat different from others. We can also find huge amounts of andradite in the Dragoon Mountains, Dripping Spring Mountains, the Clifton-Morenci area, Rosemont region and Patagonia mountains.

The other garnet commonly seen in skarns is grossular. One reason for this has to do with chemistry. Andradite is an iron garnet while grossular is mostly iron-free. Both species are basically composed of calcium, silicon and oxygen. So, a low iron region will be a likely spot to find grossular. One area where we have seen some fine material come from is Merelani in Tanzania. As with many other localities, calcareous rocks are usually involved in the process. Merelani is best noted for tsavorite, a pretty green type of grossular that is usually collected in crystal form. The color and luster are often exceptionally desirable to mineral collectors.

The type locality for grossular is a skarn in Russia where the crystals are an off-green and not nearly as attractive as the Merelani specimens, but they are from the first place where this species was recognized. Even today, they are often seen for sale at various mineral shows.

Arizona has grossular localities too. The Pima mine and Washington Camp both are noted to have grossular and other minerals typical of skarn deposits. We see quite a few others are listed as in Mineralogy of Arizona, 1977. Some of us also know about Asbestos, Quebec as a source for beautiful grossular specimens. The list goes on – but I will tell you that color will not necessarily help you to determine if your sample is andradite or grossular.

May 2021

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

May 3, 2021 - TGMS General Meeting - Starting at 6:00 p.m. - Guest Speaker: Les Presmyk

May 12, 2021 - TGMS Educational Class - Starting at 7:00 p.m. - Instructor: Bill Shelton

May 14, 2021 - TGMS Show Committee Meeting - Starting at 11:00 a.m.

May 20, 2021 - TGMS Board Meeting - Starting at 1:00 p.m.

May 31, 2021 - Memorial Day - Office Closed

All meetings are via ZOOM - you can contact the TGMS Office at tgms@tgms.org for the link to each.



TGMS was sent this great video link by a TGMS member and suggested that we post it on/in our website/Rock Talk ... so click on the link to watch a "future" mineral collector having fun opening his birthday present ... enjoy!

FROM: Museo Minerales de Zacatecas . Jesús Salinas Estrada

BETTER MINERALS THAN VIDEO GAMES AND MOBILE.

My good friend Pedro Idirin told me that his grandson was caught in the eye of minerals and that he wanted to encourage that taste that he thought was better than a video game or a cell phone, so he asked me for a few minerals to give to him for his birthday and I was really happy to see how enthusiastically he receives his gift. Facebook url: [Museo Minerales de Zacatecas . Jesús Salinas Estrada - MEJOR MINERALES QUE VIDEOJUEGOS Y MO-](#)

You are invited to a Zoom TGMS General Meeting and Lecture

When: Monday, May 3, 2021

Time: 6:00 p.m. - Tucson, Arizona Time

Join Zoom Meeting

<https://zoom.us/j/92399520250?pwd=dGtRZmR0cUMzbnN0Y3d0UDhwVHh5QT09>

Meeting ID: 923 9952 0250

Passcode: 901817

Topic: *"Quartz - Another Mineral Arizona Should Be Famous For"* - Arizona is famous for wulfenite, vanadinite, and its copper minerals including azurite, malachite, cuprite and copper, to name a few. It is truly the knowledgeable collector who would even include quartz in a list of the top ten mineral species from Arizona. However, a number of localities in Arizona have produced quartz specimens that could sit in world-wide collections and not look out of place. Smoky quartz and microcline, Japan-Law twins, drusy quartz on chrysocolla and even a variety of pseudomorphed specimens have been recovered in Arizona, much to the pleasure of collectors in Arizona, the United States and the rest of the world. Some of the copper-related specimens are found in just a few other localities in the world.

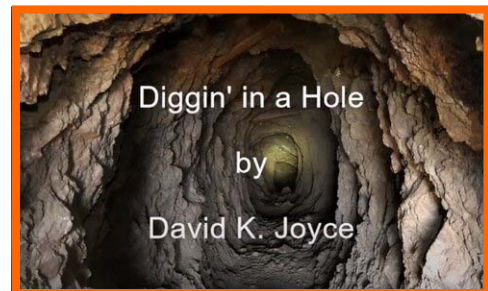


Lecturer: Les Presmyk - has been a mineral collector for 59 years and an Arizona specialist for over 40 years. He is a graduate mining engineer from the University of Arizona ('75) and retired four years ago after 42 years in the mining industry. He is the current TGMS President and has served for over 35 years on the Show Committee.

In addition, he is the Flagg Mineral Foundation Board Chairman and has spent many hours working on the displays for the new UofA Alfie Norville Gem and Mineral Museum. In his spare time he serves on several community and non-profit boards in the Town of Gilbert and the Southeast Valley. Finally, his wife of 45 years,

Paula, manages to corral him to do various projects around their home.

TGMS member **David K. Joyce** recently produced a **new music video entitled "Diggin' in a Hole"**. The music video had its "world premiere" recently, as the kick-off to the Rochester Mineralogical Symposium, which was entirely on-line this year. It was a hit! The video features mineral collectors from many places in the world collecting minerals in many different spots in the world. There are a few TGMS members amongst the collectors in the video plus many other personalities from the world of mineral collecting, that you may recognize. We hope that you'll enjoy it! YouTube url: <https://www.youtube.com/watch?v=8bHzn2poBKE&t=18s>



TGMS Educational ZOOM Class

When: Wednesday, May 12, 2021
Time: 7:00 p.m. - Tucson Time
Topic: "ELEMENTS IN MINERALS"

Join the TGMS ZOOM Class:

[https://zoom.us/j/97799306562?](https://zoom.us/j/97799306562?pwd=cHlpY0tSUUtnY2Q4OHFLYm5NdW52QT09)
[pwd=cHlpY0tSUUtnY2Q4OHFLYm5NdW52QT09](https://zoom.us/j/97799306562?pwd=cHlpY0tSUUtnY2Q4OHFLYm5NdW52QT09)

Meeting ID: 977 9930 6562

Passcode: 713581



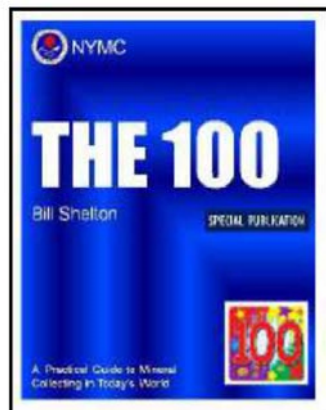
Periodic Table of the Elements

1 1A 1A 1 H Hydrogen 1.008	2 2A 2A 4 Be Beryllium 9.012																	18 VIIIA 8A 2 He Helium 4.0026																							
3 1B 3A 3 Li Lithium 6.941	4 2B 4 B Boron 10.811	5 3B 5 C Carbon 12.011	6 4B 6 N Nitrogen 14.007	7 5B 7 O Oxygen 15.999	8 6B 8 F Fluorine 18.998	9 7B 9 Ne Neon 20.1798																	10 VIIIA 10 Ar Argon 39.948																		
11 1B 11 Na Sodium 22.990	12 2B 12 Mg Magnesium 24.305	13 3B 13 Al Aluminum 26.982	14 4B 14 Si Silicon 28.086	15 5B 15 P Phosphorus 30.974	16 6B 16 S Sulfur 32.065	17 7B 17 Cl Chlorine 35.453	18 VIII 18 Kr Krypton 83.80																	19 1B 19 K Potassium 39.098	20 2B 20 Ca Calcium 40.078	21 3B 21 Sc Scandium 44.956	22 4B 22 Ti Titanium 47.88	23 5B 23 V Vanadium 50.942	24 6B 24 Cr Chromium 51.996	25 7B 25 Mn Manganese 54.938	26 8B 26 Fe Iron 55.935	27 9B 27 Co Cobalt 58.933	28 10B 28 Ni Nickel 58.693	29 11B 29 Cu Copper 63.546	30 12B 30 Zn Zinc 65.39	31 13B 31 Ga Gallium 69.723	32 14B 32 Ge Germanium 72.63	33 15B 33 As Arsenic 74.922	34 16B 34 Se Selenium 78.972	35 17B 35 Br Bromine 79.904	36 18B 36 Kr Krypton 83.80
37 1B 37 Rb Rubidium 85.468	38 2B 38 Sr Strontium 87.62	39 3B 39 Y Yttrium 88.906	40 4B 40 Zr Zirconium 91.224	41 5B 41 Nb Niobium 92.906	42 6B 42 Mo Molybdenum 95.94	43 7B 43 Tc Technetium 98.906	44 8B 44 Ru Ruthenium 101.07	45 9B 45 Rh Rhodium 102.905	46 10B 46 Pd Palladium 106.42	47 11B 47 Ag Silver 107.868	48 12B 48 Cd Cadmium 112.411	49 13B 49 In Indium 114.818	50 14B 50 Sn Tin 118.710	51 15B 51 Sb Antimony 121.757	52 16B 52 Te Tellurium 127.6	53 17B 53 I Iodine 126.905	54 18B 54 Xe Xenon 131.29	55 1B 55 Cs Cesium 132.905	56 2B 56 Ba Barium 137.327	57-71 Lanthanide Series 57-71 La-Lu	72 3B 72 Hf Hafnium 178.49	73 4B 73 Ta Tantalum 180.948	74 5B 74 W Tungsten 183.85	75 6B 75 Re Rhenium 186.207	76 7B 76 Os Osmium 190.23	77 8B 77 Ir Iridium 192.22	78 9B 78 Pt Platinum 195.08	79 10B 79 Au Gold 196.967	80 11B 80 Hg Mercury 200.59	81 12B 81 Tl Thallium 204.383	82 13B 82 Pb Lead 207.2	83 14B 83 Bi Bismuth 208.980	84 15B 84 Po Polonium [209]	85 16B 85 At Astatine [210]	86 17B 86 Rn Radon [222]						
87 1B 87 Fr Francium [223]	88 2B 88 Ra Radium 226.025	89-103 Actinide Series 89-103 Ac-Lr	104 3B 104 Rf Rutherfordium [261]	105 4B 105 Db Dubnium [262]	106 5B 106 Sg Seaborgium [266]	107 6B 107 Bh Bohrium [264]	108 7B 108 Hs Hassium [277]	109 8B 109 Mt Meitnerium [268]	110 9B 110 Ds Darmstadtium [271]	111 10B 111 Rg Roentgenium [272]	112 11B 112 Cn Copernicium [285]	113 12B 113 Uut Ununtrium [288]	114 13B 114 Fl Flerovium [289]	115 14B 115 Uup Ununpentium [288]	116 15B 116 Lv Livermorium [293]	117 16B 117 Uus Ununseptium [294]	118 17B 118 Uuo Ununoctium [294]																								
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Alkali Metal
Alkaline Earth
Transition Metal
Basic Metal
Semimetal
Nonmetal
Halogen
Noble Gas
Lanthanide
Actinide

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sciencenotes.org

"The 100 - A Practical Guide to Mineral Collecting in Today's World"



By Bill Shelton - Collector, Writer & Educator

This publication is fully illustrated in color

Over 50 pages

Practical information about 100 of the most available minerals you are likely to collect

\$15.00. each

If you would like to purchase one for yourself, please contact the TGMS Office at tams@tams.org or 502-322-5773

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**

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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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