

THE MIDWEST FACETER



*Created Sapphire, 12 mm, 7 ct. paraiba
color by Danny Stern*

The Official Newsletter of the Midwest Faceter's Guild
March 2025

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About the Guild

The Guild began in 1979. Its missions are to promote faceting education and recreation.

Developing the art of faceting is its most important responsibility. The Guild also creates an environment of shared information related to faceting via meetings for those of like interests and encourages the achievement of individuals.



The Midwest Faceter Features

More About Photography

In the last issue, we delved into the art of using stacked images to capture stunning photographs of gemstones. This time, prepare to be amazed by Dr. Reg's experiments, where he pushes the boundaries of traditional photography to create breathtaking, unique images that transform gemstones into shimmering works of art.



The Personality of a Faceter

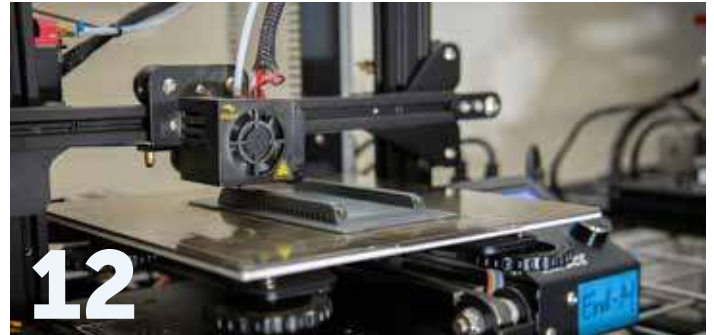
Graham Sherar invites us into a fascinating three-part series exploring the intriguing world of faceters. In his first article, he reveals how faceters' workspace can be a mirror of their personality, each tool and arrangement telling a story of its own, offering a glimpse into the mind of the craftsman.



Gemstone Faceting and 3D Printing

Edward Burch, the innovative owner of a 3D print shop, opens the door to exciting possibilities with his exploration of 3D printing in the realm of gemstone faceting. Discover how this cutting-edge technology is revolutionizing traditional techniques and paving the way for new creations

in the faceting community.



Illusion and Ruination

In the second article, "Illusion," Graham Sherar teams up with Tony Collins to unravel the mystery behind crafting an exquisite design that captivates the eye. Moving on to the third article, Graham takes us on a journey through the meticulous gem cutting of a design aptly named "Ruination," complete with detailed cutting diagrams, promising a deep dive into the intricate artistry of gemstone creation.



Illusion gemstone



Ruination gemstone

President's Message

By Chester Kiernicki



Image created by Adobe Firefly

Dear MWFG members and friends,

We are starting a new year with the Midwest Faceter's Guild. We have a new executive board. I assumed the office of President and Daniel Peisach assumed the office of Treasurer for the Guild this year. Barb Yost and Caroline Peterson remain Vice President and Secretary for the Guild this year.

This means that there's a transition in place. Cristine Grimm, our retired President, has been transferring all the documentation and list of duties and responsibilities for the President's office to myself. Dan has been working to get the Treasurer's office information in place so he can take over those responsibilities.

In addition to the transition activity, we had a couple of challenges that reared up their ugly heads.

Website Challenges

One of the projects that we started last fall was getting a new website up and running. Things were going along well with the project until they weren't. We ran into a situation where a couple of things happened:

1. We had a hacking attempt happen. Although our firewall and other security tools prevented anyone from taking it over, we did run into some problems with the software we use to run the website. We identified the problem and had one of our programmers work on resolving it. Unfortunately, while the programmers were working on it, they managed to break it. OOPS! We are still experiencing some minor issues. This delayed the late releasing the new website by about three weeks.
2. The next challenge with the website, because of the hacking attempt, was the payment processor we were using. It was disabled by the company that we get the service from. This resulted in us having to upgrade some of the software to comply with the PCI credit card processing systems. We have recently resubmitted our website for inspection and are undergoing PCI compliance checks. We hope to have those done and a response from the payment processor returned by February 22.

We had hoped to begin the membership renewal process January 1 but due to the delays we will start it up as soon as possible in late February.

Enough about the bad news that's happened and let's talk about some of the good stuff that's going to be happening this year.

Positive Developments for 2025

Educational Initiatives

We had a Board meeting in January where we all sat down and talked about plans for 2025. We have some very positive things that are going to happen this year. The first one is the Education Committee is currently lining up guest speakers for the 2025 season. Barb Yost and the Committee

members are talking to people in the hobby as well as professionals in the faceting world. Once we have our lineup solidified, we will announce the speakers for the next Zoom workshops.

Annual Faceting Seminar

The second thing that came out of our Board meeting In January is we have set a date for the Annual Faceting Seminar that Midwest Faceter's Guild puts on every year. It will be in August again and once we have confirmation on the venue, we will be announcing that. Last year's Seminar was very successful. We will follow the same format where we will have up to 12 beginner slots open. We will also have up to 12 immediate faceter slots open. Interesting news, I have already received at least three people inquiring about the Seminar already, and one of them wants to sign up as soon as we open registration.

Along with the Annual Faceting Seminar, we will be reaching out to our current instructors, as well as looking for Guild members who would like to become faceting instructors to make sure we have enough people on hand to coach the beginner class, as well as have some more experience Guild members act as coaches for the intermediate class. We will be sending out request for volunteers in the upcoming months.

Member Support Forum(s)

Something else that we are working on is a project being led by Dr. Reg Williams. Since we have close to 100 members with various degrees of expertise and experience, Dr. Reg is working on leveraging our collective knowledge in putting together a help forum, where any Guild member can volunteer to assist with questions, techniques or ideas on various of topics. We are also looking to expand our on-line presence with Facebook and potentially a dedicated forum for MWFG. Look for the email from Dr. Reg. He has already sent it out by the time you get this Newsletter. Dr. Reg will go into much more detail than I have here.

This is our Guild, and your participation is greatly appreciated. We have members that volunteered to help with various projects in 2024.

Thank you.

As the Midwest Faceter's Guild grows in 2025, my hope is to have more members step up and help with that growth and make us even better in 2025.

Sincerely,

Chester Kiernicki

Midwest Faceter's Guild President

Editor's Gem

By Dr. Reg Williams



Image created in Adobe Firefly

In previous issues of *The Midwest Faceter*, I described the articles in the Editor's Gem. However, I thought it might be more engaging to introduce a new page featuring highlights from the current issue—thus, *The Midwest Faceter* Features. You might notice I'm beaming with pride, as six Guild members, including myself, have contributed articles to this issue. Their contributions enrich our Newsletter with a diverse array of articles, fostering a sense of community.

As you read, remember that you, too, can contribute an article. Consider sharing something you've learned about faceting, a solution to a faceting problem, or a helpful tip or trick. No experience is too small to share. Articulating how you overcame a challenge can provide valuable insights for others, even beginners. Don't assume that more experienced faceters are already aware of every technique. Faceting is a journey where we're all constantly learning. So, in simple terms,

please send me your article. Your contribution will benefit the Guild. And don't forget to send a picture of a gemstone you recently cut, along with details about the material used, its size in millimeters, and its carat weight.

I initially planned for *The Midwest Faceter* Features to be just one page, which didn't leave enough room to showcase Thomas Prangley's excellent article. His piece exemplifies the spirit of shared learning. He discusses his experiences with polishing CZ and the challenges of removing a stone from a dop—a task that can vex even seasoned faceters. After a little encouragement, he graciously agreed to share his insights!

In another example of sharing valuable knowledge, Valerie Meyers, the Editor of the Midwest Federation Newsletter (MWF), requested to reprint my article on preforming from the September issue of *The Midwest Faceter* in their February issue. She felt it would be beneficial for MWF Society members, demonstrating a wonderful way to spread useful information.

To further strengthen our community, the Board has discussed establishing a MWFG Resource Pool. This initiative would allow members to assist each other with faceting challenges. Reflect on those times as a novice faceter when having a knowledgeable person available for advice would have been invaluable. Here's our chance to offer that support to one another. You should have received a Google form to provide your input on this resource pool. We'd love to know how you'd like to get involved. If you've already filled out the form, thank you! If not, please do so as possible. We'll update the Guild on the feedback and steps to bring this idea to life.

May all your facets sparkle,

Dr. Reg

Membership

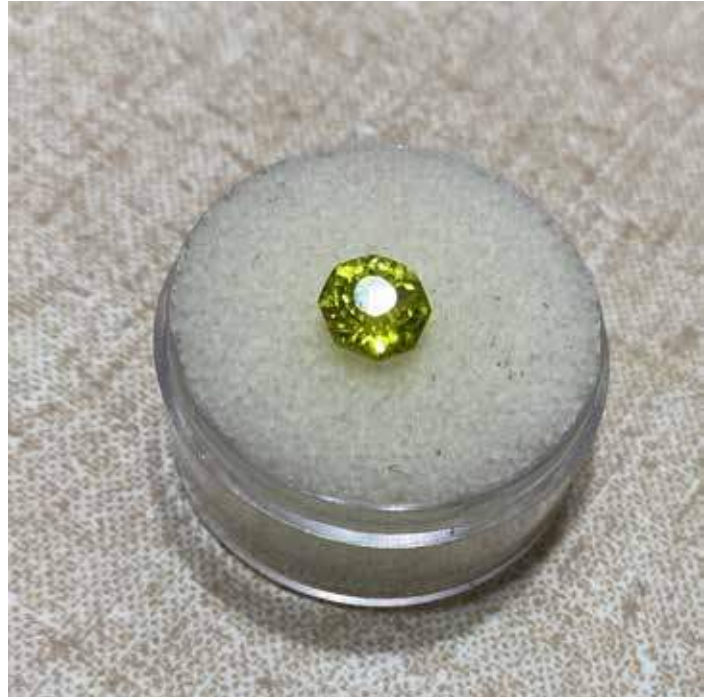
Welcome to the following new members:

Rocky Frees

My wife Angela and I live in Muskegon, MI and are members of several rock and gem groups in the west Michigan area.

I (actually both of us) are new to faceting having received some initial training from Mike Rakovits and Eric Peterson from the White River Rock Club.

Currently I have only successfully completed a couple of final gems (Angela on her 2nd) having received our new Ultra Tec V5 last December. So basically we are both still learning. We are both now retired and are finding more time towards this hobby. We also enjoy sailing and aviation activities as well.



Peridot "Standard Round Brilliance."

Markos Sifakakis

Markos is from Cottage Grove, OR and uses an Ultra Tec VL. He states he has been faceting for at least 10 years.



A Cut Above

Danny Stern

Since Danny learned to facet at the last Seminar, he has been busy at work cutting gemstones. His daughter put in an order to get the first stone he completed on his own. So, Danny cut the created Sapphire for her that is featured on the front cover. She was very excited to say the least! Danny also cut this created citrine, 12 mm and 7 ct.



Thomas Prangley

Thomas sent a photograph of a gemstone he cut in December 2024. It is CZ with an incredible color. As Editor, I suggested to him to write an article on polishing CZ, which he did! Read it on page 21.



Dr. Reg

Dr. Reg cut this Garnet that he brought back from Africa. It is Square Cushion cut designed by Justin Prin 8.16 mm and 3.47 ct. The stone had more inclusions than expected but turned out to be a pretty stone. Here is another example of using the stacking feature in his mirrorless Canon camera and read his article, "More About Photography", on page 8.



Tips & Tricks

More About Photography

By Dr. Reg Williams

In the last issue of *The Midwest Faceter*, I shared an article about using the stacking feature in my new Canon EOS R5 Mark II camera. It is truly amazing how this feature takes a series of photographs of a gemstone from the front to the back and then stacks the images internally to ensure the entire gemstone is in focus, like the dice photographed and seen in the last issue.



Please keep in mind that I am not a professional photographer (emphasis on not), but I thought I would experiment with photographing some of my gemstones using the stacking feature and other methods to showcase them. You might recall the front cover of the December issue of *The Midwest Faceter*, which featured a citrine I cut using my Ultra Tec Fantasy Machine. I first photographed the citrine using the stacking feature, then used Photoshop to place the gemstone in a cave setting, creating an effect of discovering gold in a cave! It's always fun to explore the possibilities with Photoshop.



In another experiment, I bought an inexpensive smoke machine on eBay that uses paraffin oil and took a picture of a blue-green spinel gemstone. Unfortunately, it didn't turn out well as the gemstone appeared lost in what looked like instrument flight rules (IFR) weather conditions, obscured by the smoke! It's a challenge to use just enough smoke without overwhelming the image, and I used a flash to capture the smoke's suspension. While the picture wasn't particularly clever, experimenting was enjoyable, and I plan to pursue other smoky photographic ideas in the future. One word of caution: Do not use the smoke machine in the vicinity of a smoke detector. The smoke can set off the alarm and if your system is connected to the fire department, they will show up at your house with the siren and the red lights flashing!



My wife owns a Waterford candy dish with sharp edges, and I placed cut-up colored paper at various angles underneath it. I photographed the crystalite heart gemstone from directly above using my macro lens. This setup kept the gemstone in focus while giving the background a captivating kaleidoscope effect.



For a blue spinel gemstone, I used a flower as a backdrop, and the stacking feature ensured the gemstone was fully in focus against the floral background. Since grocery stores often sell inexpensive flower bouquets, you can use these in

your photos by cutting the stems short. I believe this setup enhances the gemstone's beauty. I used a color wheel to select a flower that would contrast with the stone.



I also tried placing a Madeira citrine gemstone on a yellow rose, simulating water droplets with vegetable glycerin, resulting in a unique look. Glycerin works better than water because it tends to stay in place, while water tends to run off. I wasn't entirely pleased with the photograph due to framing issues but thought I would share it as another example.



featured in the next Newsletter.

Photographs by Dr. Reg

Quotable Quotes

Nothing is impossible. The word itself says, "I'm possible!"

Audrey Hepburn

You have to set goals that are almost out of reach. If you set a goal that is attainable without much work or thought you are stuck with something below your true talent and potential.

Steve Garvey

Along a similar theme, I used a dried flower as a backdrop for a crystallite gemstone. Photographing just the gemstone with contrasting material seems to add interest. Ultimately, it's a matter of personal choice in how you showcase your gemstones.



So, there you have it—my experiments in taking unique photographs of the gemstones I have cut. I'm always amazed at how professional photographers and artists devise creative ways to capture images and videos. I wish I had more of that creative spark, but hey, I tried!

Hopefully, this article inspires you to photograph the gemstones you have cut. Feel free to send them to me as the Editor, and your work can be

The angles used when cutting the Pavilion closing culet facets of a gemstone are very important. These angles are more important than any of the others in the design. This is especially true when faceters go about trying to gain the most brilliance from their piece of gemstone rough yet do not want any windowing to be the final result. Since each species of gem mineral has its own refractive index and its own critical angle, care must be taken to choose the best culet angles.

Glenn Klein

The statistics on sanity are that one out of every four Americans is suffering from some form of mental illness. Think of your three best friends. If they're okay, then it's you.

Rita Mae Brown

Being in the same room with people and creating something together is a good thing.

Robbin Williams

The Personality of a Faceter

By Graham Sherar

The faceting area we create for ourselves is like a mirror, reflecting our character, taste, aspirations, our interests, and our foibles.

“If a cluttered desk is a sign of a cluttered mind, of what, then, is an empty desk a sign?” – Albert Einstein

The desk photo below was taken at a workshop 2023. The owner of this desk knows where to find the things he needs on it when he requires them. This fellow’s faceting desk always looks like this!

What would Albert Einstein make of this fellow and his desk? This photo was taken a couple of hours in from the start of a four day workshop:



Like the best museums our faceting spaces are living “growing things” – evolving places of celebration, reflection and inspiration, places where ourselves and others can see how things are in our version of the faceting world and our place in it; places where ourselves and other faceters can learn how that history has evolved and how it

guides us in the present and provides a foundation for the future of our version of our hobby.

This fellow’s desk, taken on the fourth day of the same 2023 workshop, presents a quite different glimpse into the personality of the faceter.



Our faceting and the bits and pieces we add to our collection of “faceting stuff” changes and is modified to our ever-changing needs over time. It is good to be enlivened by ingenuity and beautiful stones, by a sense of opportunities to be grasped, and the future pitfalls to be avoided as our faceting knowledge, skills and experience grows.

“Who in the world am I? Ah, that’s the great puzzle.” – Lewis Carroll, Alice in Wonderland.

Faceter’s “Brag Boxes,” their accumulated “faceting stuff” and their attitude to cutting their stones is often a window into the attitude and personality of the cutter.

“I’m not strange, weird, off, nor crazy, my reality is just different from yours.” – Lewis Carroll

Gemstone Faceting and 3D Printing

By Edward Burch

Greetings fellow faceters! My name is Edward, and in this article, I'm going to give you a glimpse into the world of 3D printing. Perhaps you've seen this technology on the news with 3D printed homes, or maybe you have a friend or family member that makes dazzling toy dragons seemingly by the dozens. You may even have a 3D printer yourself! No matter your experience level, by the time you're done reading you'll be prepared to join the hands of Gemstone Faceting and 3D Printing. The similarities are already closer than you think.

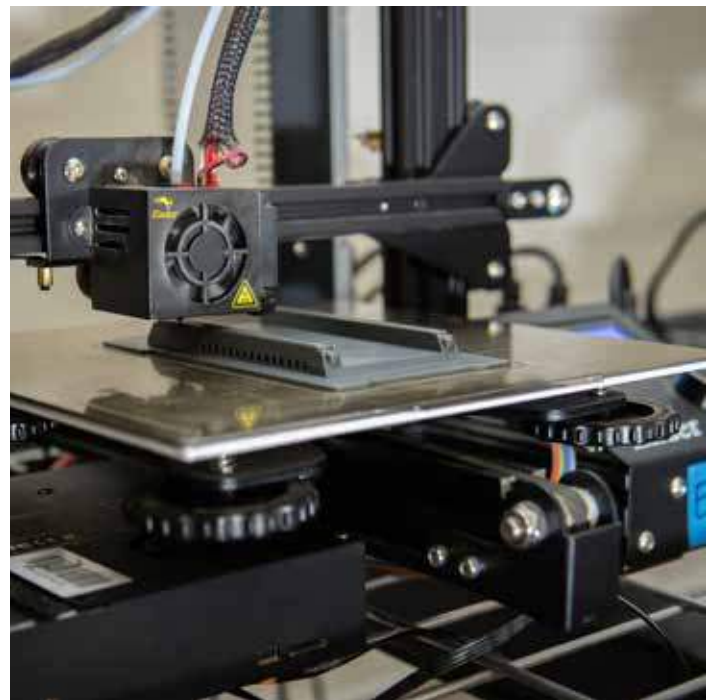
My personal background in 3D printing starts not as a hobby, but as a profession. In 2016 while taking classes for computer networking I started working part-time with a good friend of mine at a startup called "Thingsmiths." After about a year I exited school to work full-time as production manager, handling everything from machine maintenance, job preparation, client management, through sanding and final painting. Over the years we've grown from having five desktop machines to 40+ machines, in addition to large format industrial machines. Thingsmiths services all manner of clients ranging from entrepreneurs and inventors to global businesses and manufacturers. I'm excited to share the experience and knowledge I've gained! But first, we need to get cozy with 3D printing fundamentals.

Okay, But What IS 3D Printing?!

3D printing, also known more accurately as "Additive Manufacturing," is the creation of objects using machines and methods that build material up. This contrasts with traditional subtractive manufacturing, which would be more

akin to making a wood bowl or pool cue on a turning lathe. Instead of starting with a solid piece of material and cutting or chipping away until we reach the desired result, additive manufacturing starts with a quantity of consumable material and runs it through a process to adhere it to itself in a precise shape. We'll briefly touch on a couple of the most common types of machines and materials, and the first one we'll talk about is the easiest for explaining the 3D printing process.

FDM, which stands for "Fused Deposition Modeling," is currently the most prevalent form of 3D printing.



You can purchase FDM 3D printers from a variety of sources, from many manufacturers, and they all follow the same general principle. The "Fusion" of this method comes from the layer-by-layer process that the machines use to build objects. Think of it like taking a hot glue gun and slowly

and accurately drawing the outline of a square. You draw the square to be 3 inches wide and 3 inches long with the glue layer being about 1/8th of an inch thick. Let's say you repeat this process by using the hot glue gun to layer down another 1/8th inch square, 3 inch by 3 inch, right on top of the first. Do this 24 times, and you will now have a three-dimensional square that is 3" x 3" x 3". This is the basic principle that practically all 3D printers use to build objects albeit on a much more precise scale.

Types of Plastic

While a hot glue gun is perfect for adhering craft components, it does not make very useful parts. For objects that can stand up to daily wear and tear, we look to common thermoplastics. Common choices in a boring list are:

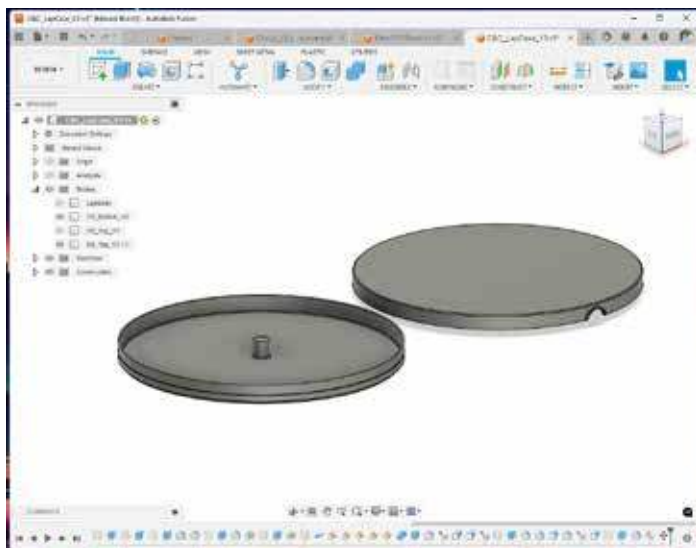
- PLA
- PET/G
- ABS
- Nylon
- Polycarbonate
- PEEK, PEKK, PA12, and other Acronym's engineering plastics



3D print filament

We won't dive too deep into the details of each material, otherwise I'd need to charge a consulting fee! For starters, Polylactic Acid (PLA) is the best all-around plastic for FDM 3D printing. Polylactic Acid is the material's full name and is commonly manufactured from agricultural sources rather than oil refining, making it a greener and renewable plastic. While it does not have the heat resistance of ABS or the toughness of Nylon it by far is the easiest plastic to use on a 3D printer. For most objects are the house or workshop it is plenty tough. Plastics and 3D printers can only do so much on their own, however. To get them to make the things we want, we need one more ingredient: Instructions.

Additive Manufacturing is a digital process that requires the use of computers. The 3D printers themselves run on simple computers but cannot make an object without being told what to make. Try as I may no 3D printer has ever responded to yelling or pleading. The only language they understand is computer code. Luckily, we can speak their code through two important types of software: CAD modeling and GCode slicing. Wait, wait, wait! Please don't run! We're almost done with acronyms I promise! CAD (Computer Aided Design) is nothing new, dating back to the 90's or possibly 80's depending on your definition, and GCode also has its roots in early NC (Come back!) machining. At its core CAD is the creation of a 3D object on a computer and Gcode is translating that 3D object into movement instructions that the 3D printer can follow.



Software required to translate the 3D model to code for the 3D Printer

I get the “How”, now for the “Why and What.”

Reaching the “Why” beyond the “How”

Hopefully by this point you have a clearer understanding of the methods and process of the 3D printing, but now the big question: WHY? The applications for this technology have a wide range, and within this span then falls gemstone faceting. Oftentimes when I am training or otherwise working with individuals on a 3D printing project, the first challenge I encounter is not technological, but logical. The free form creation method of 3D printing stands in contrast to many methods of making things. It’s ability to create intricate, complicated and articulate objects is unlike metalworking or woodworking, where an object may contain multiple items being processed separately and joined together to create the final item. Once you unlock the secret of 3D printing in your mind you begin to see problems and solutions everywhere.

Some excellent examples actually come from fellow Guild members. Daniel Stern and Dr. Reg Williams began their 3D Printing journey as many do with the purchase of an FDM printer.



Finished 3D print of a lap protector. Photographs by Edward Burch.

For a first endeavor they decided to print cases for their laps. This is an excellent first project for a couple reasons:

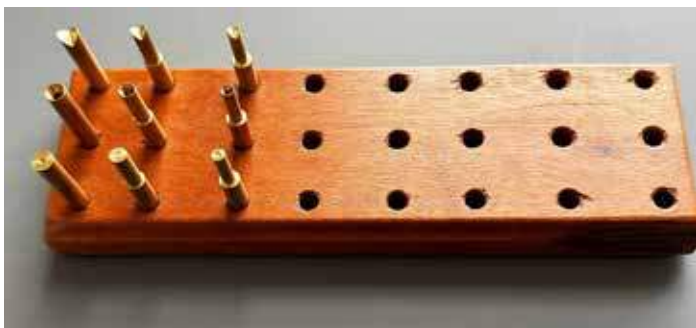
1. The shapes involved are simple (mainly circles)
2. The project serves an immediate need
3. The prints are decently quick, so feedback is available in hours instead of days
4. Comprised of a “bottom” and “top” the lap case provides a small challenge of pieces that must fit together

As an example, Kingsley North sells a Crystalite lap protector for \$20.90 plus shipping. With a 3D printer, you could print a lap protector for less than \$1.00 in the cost of the filament. That is a significant cost savings.

While there are digital files available from 3D printing websites that can simply be copied and placed on your machine, our protagonists decided to go a step further and use a CAD program to create their lap cases from scratch. Here lies the true beauty of 3D printing: customization. With full control of the manufacturing process, you

can change every aspect of your project in real-time with the click of a mouse. Your lap is only 8 millimeters thick rather than the 12 millimeters that you initially designed for? Simply change the thickness on the computer, put the file back on your printer and print the new case.

Let's look at another project. Traditionally constructed from nature's own renewable material, wood, a dop holder is perfect for digitization. Don't get me wrong, sanding down a nice block of maple and drilling holes in a grid makes for a pleasant Sunday afternoon!



But for those who cannot fit a wood shop into their living arrangement, 3D printing offers an alternative. The flexibility of a 3D printer means that you can make a dop holder for one, two, 15, or 100 dops (depending on the size of your machine) using the same spool of filament material. Hole pattern and spacing can be perfect down to the 1/10th of a millimeter. Labels, logos, embosses, fillets, tabs, and many other features can be implemented in a single process. What you see on the computer screen is exactly what the printer will make.



3D print dop tray designed by Daniel Stern with our local faceting group's name!

The Next Horizon

Hopefully you now have a grasp on the basic concepts of 3D printing. In future articles, we will explore 3D concepts in depth and apply them to more advanced projects, beyond simply replicating existing tools. If you read this and already have ideas or applications, share them! Tell your friends, send them to the Faceting Facebook group, or even email them to me directly (edwardburch3@gmail.com) and maybe they'll get featured in a future article.

In conclusion, 3D printing may have been developed in the 80s, but the equipment was far too expensive for the average user. As technology advanced manufacturers were able to reduce the costs to consumer-levels, and now an entry level 3D printer can be had for \$200 (compare that to the cost of a faceting machine!). You can learn CAD to design your own tools and parts, or download them from the Internet. The lap container and dop holder examples are just the start- use your imagination and the sky is the limit. Just like faceting, 3D printing is a fun and rewarding hobby. I hope this article inspires you to consider 3D printing in your world of faceting.

The Illusion of Faceting

By Graham Sherar and Tony Collins

The Collins English Dictionary defines an illusion as:

1. “A false idea or belief, or,
2. Something that appears to exist or be a particular thing but does not actually exist, or is in reality something else.”

Natural gemstones are a gift of nature and are magical in themselves. That enchantment is intensified for the fossicker (Australian for Rockhouser) who has toiled head down and bottom up in a stream shoveling and sieving somewhere in the great outdoors sorting the few available gemstones from hundreds of useless pebbles. Leaving that stream with a pain in the back, wet buttocks and a bag of potential cutters the fossicker and faceter is under no illusion about what to do next with the bagged bootie.

“Normal is an illusion. What is normal for the spider is chaos for the fly.” – Morticia Addams

The true potential of a gemstone is only realized by the faceters touch, the cutting which releases the internal fire of the stone and creates the mesmerizing scintillation which makes gemstones so unique and enticing to the eye. Cutting stones is a fascinating blend of foresight and technical skill, like most arts.

To many non-faceters, it seems magical to take a piece of average looking natural rough stone, knowing the potential sparkling beauty and/or vibrant color that lies within it, and selecting and applying an appropriate cutting design to reveal the color and unique character which lies hidden within the interior of the stone. Such is the art and science of faceting!

“Reality is merely an illusion, albeit a very persistent one.” – Albert Einstein

This concept is not an illusion. Nor is faceting about some magical transformation of nature’s stone by the faceter into a thing of outstanding beauty. To greatly increase the chances of a successful outcome, the process should be planned and carefully calculated on an individual basis stone-by-stone.

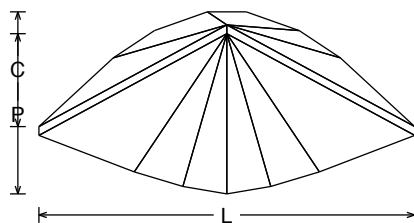
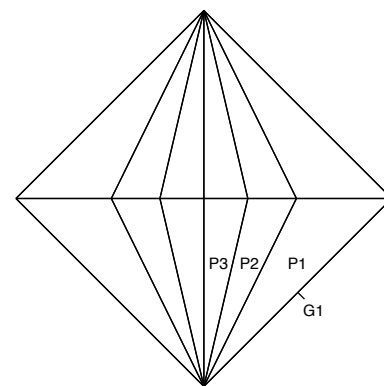
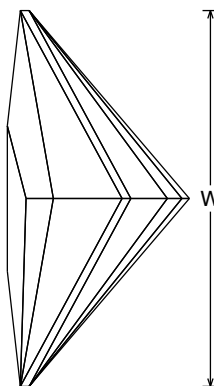
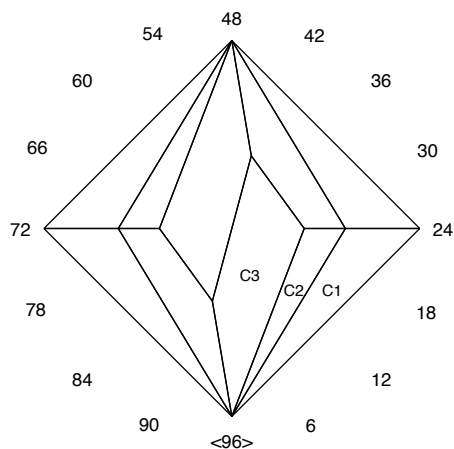
This involves identifying the piece of rough. Assessing the individual nature and characteristics of the piece. Planning for maximum yield. Selecting a design to compliment the material at hand with cognizance of the Refractive Index and critical angles of the piece of rough material at-hand. Checking and rechecking angles, indices, facets and meets during the cutting and polishing procedures. Careful transferring and doping to ensure the best possible outcome.

You know how it goes, you’re a faceter! You understand what is required to get a stone from fossicked water worn rough to sparkling thing of beauty ready to be set in an exquisite piece of bespoke jewelery! Few faceters would deny that the reward associated with finishing a faceted gemstone has a magical feel to it.

Here is an opportunity for you to weave your magic on two tried and tested diagrams. No tricks or illusion here, nor hope that can’t be achieved! Apply your magic touch! Give one, two, or all three of these enchanting designs a try.

Tony Collins’ design “Illusion” is included in this Edition of *The Midwest Faceter*. At the time of writing this article, Tony had the following comments to make about this design:

“You can comment on this design, or if you have pictures of your cut of this design by sending to [tonyacdsgns](mailto:tonyacdsgns@gmail.com) (you know what goes in the middle) gmail.com



Illusion

Tony Collins - May 2019
 With help from Dennis Anderson
 ZigZag Girdle series
 Angles for R.I. = 1.540
 22 + 4 girdles = 26 facets
 2-fold radial symmetry
 96 index
 $L/W = 1.000$
 $P/W = 0.426$ $C/W = 0.305$
 $Vol./W^3 = 0.106$

Pavilion

P1	45.00	06-42-54-90
G1	90.00	12-36-60-84
P2	43.00	05-43-53-91
P3	41.00	03-45-51-93

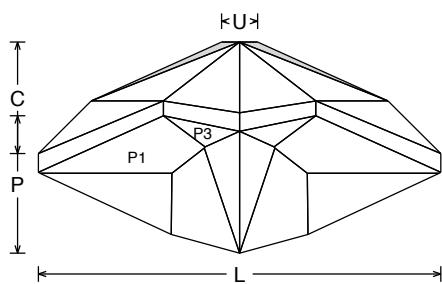
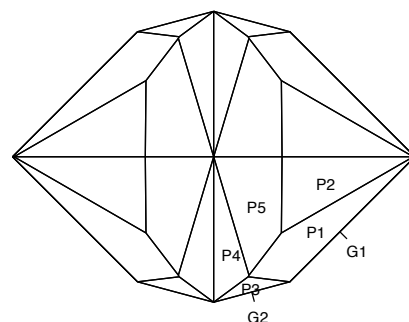
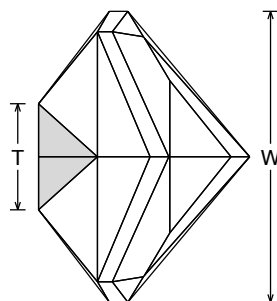
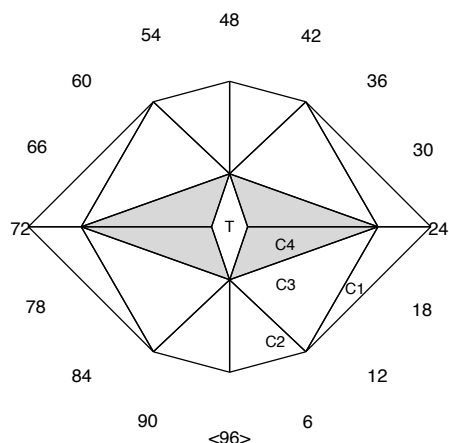
TCP
 Set Size
 New TCP Meet P1G1
 PCP Meet G1P2P3

Crown

C1	45.00	18-30-66-78
C2	35.00	19-29-67-77
C3	15.00	20-68

TCP Level Girdle
 New TCP Meet G1C1
 Meet G1C1C2

Works for quartz to CZ but better in higher RI
 P2 and P3 are very easy to over cut. Take care when orientating rough on dop.
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Illusional Eye Neo

A. Collins - May 2020

ZigZag Girdle series

Ver. A2B

Angles for R.I. = 2.150

37 + 8 girdles = 45 facets

2-fold mirror-image symmetry

96 index

L/W = 1.383 T/W = 0.365 U/W = 0.124

P/W = 0.472 C/W = 0.383

Vol./W3 = 0.289

Pavilion

P1	51.00	08-40-56-88
P2	43.00	08-40-56-88
G1	90.00	12-36-60-84
P3	56.50	06-42-54-90
G2	90.00	04-44-52-92
P4	40.50	03-45-51-93
P5	40.40	05-43-53-91

TCP

Set Size (Meets at P1P2 sets Length)

Set Size Meet P1P2

Meet P1P2 (at other corners)

Meet P1P2P3G1 Set Size (Width)

Meet G2P3 PCP

Meet P1P2P4 and P4P4 at PCP

Crown

C1	49.00	16-32-64-80
C2	37.50	01-47-49-95
C3	30.00	16-32-64-80
C4	25.50	19-29-67-77
T	0.00	Table

Level Girdle (ha!)

Level Girdle Meet G1G2

Meet G1G2

Meet C1C2 - Optional - Leave Frosted instead of Table

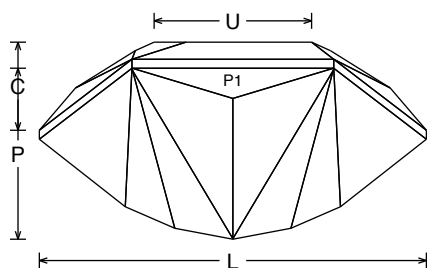
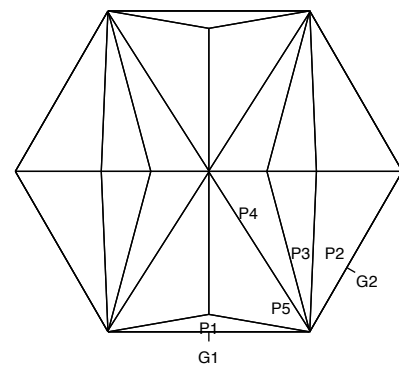
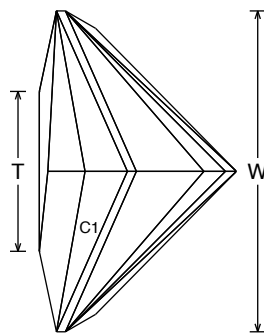
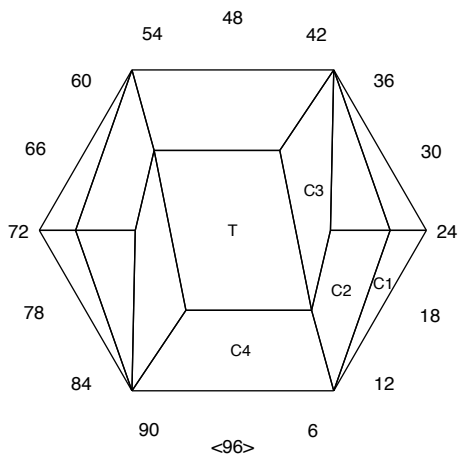
Meet C2C3 - Optional - Leave Frosted optional

Works for quartz to CZ

Cheat to get meets

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Illusion hex

Tony Collins - Sep 2020

ZigZag Girdle series

Angles for R.I. = 1.540

31 + 6 girdles = 37 facets

2-fold radial symmetry

96 index

$L/W = 1.206$ $T/W = 0.498$ $U/W = 0.491$

$P/W = 0.533$ $C/W = 0.275$

$Vol./W^3 = 0.260$

Pavilion

G1	90.00	96-48
P1	60.00	96-48
G2	90.00	16-32-64-80
P2	50.00	11-37-59-85
P3	44.50	07-41-55-89
P4	44.00	03-45-51-93
P5	44.80	02-46-50-94

Set Size

Level Girdle Set Size

Set Size

Set Size

Meet G1G2 New TCP

PCP Meet P5P4P2

Meet G1G2P3P1P2

Crown

C1	50.00	21-27-69-75
C2	32.00	23-25-71-73
C3	14.00	27-75
C4	12.00	96-48
T	0.00	Table

Level Girdle Meet G1G2

Meet G1G2C1

Meet G1G2C1C2

Level Gridle Meet G1G2

Works for quartz to CZ but better in higher RI

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This, and the other Zig Zag designs, was inspired by the design “No stinkin’ badges.” Who says that girdles must be straight and level? The idea intrigued me, and after a couple of simple designs like Trizag, I had this shape in my head, and it took a bit to get out. It helps to visualize as a dog-clutch with two V teeth each. One side “engages” the other side. The key to cutting is realizing that the P1 and C1 are matched pairs - they engage each other.

The design cuts quick once you get the idea of the shape. You must be careful with P2 & P3 as they are easy to over cut. The design is good for most of the usual materials, and you should not need to Tangent Ratio the design. Doing so will distort the girdle lines because P1 and C1 have direct relationship to each other.”



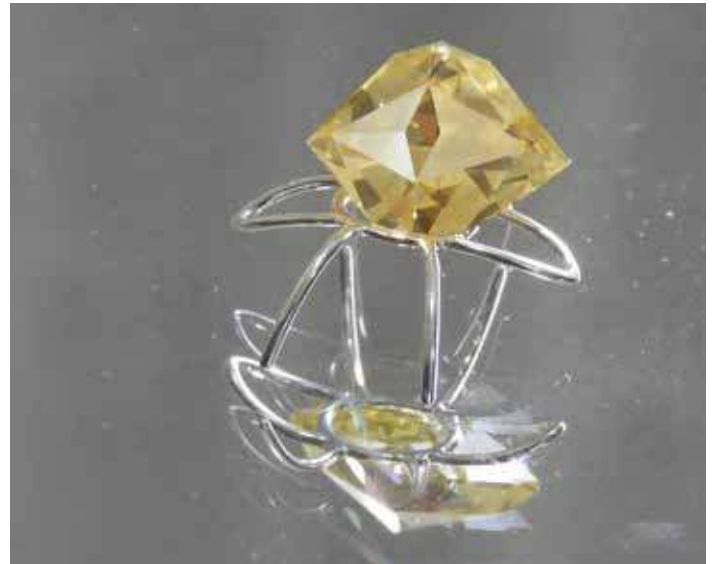
Illusion in yellow CZ



Illusion in light colored Amethyst

Tony Collins’ designs “Illusional Eye Neo” and

“Illusion Hex” are also included in this Edition of *The Midwest Faceter*.



Illusional Eye Neo in light yellow CZ

The illusional hex video on making design and cut is available at <https://www.youtube.com/watch?v=2PnkXYYWyMk>

NOTE:

Tony currently has 22 designs on the www.gemologyproject.com Website, including the three featured here in this article.

Tony’s YouTube site can be found at: <https://www.youtube.com/TonysGemDesignswithGCS>

Tony recently wrote an article about the setting-up of Gem Cut Studio (GCS). The article will be of particular interest to faceters who are new to the program. Rej Poirier, the designer of GCS, has placed Tony’s article on the GCS Website at: <https://gemcutstudio.com/documentation/>

Tony’s designs have been featured in Newsletters and Competition Schedules for the Australian Faceter’s Guild (AFG), United Kingdom Faceter’s Guild (UKFG), Columbia-Willamette Faceters Guild (CWFG), NE1 Faceters Newsletter, and the United States Faceter’s Guild (USFG).

Happy Faceting!

Beginner Polishing CZ

by Thomas Prangley

This article came about from me wanting to share some photos of a stone I cut with Dr. Reg. He and many others helped introduce me to faceting at the Guild Seminar last August, so I wanted to see what he thought of my latest work. I thought I did an okay job for my second stone, but Dr. Reg liked it enough that he asked if I'd share some of my experience in the Newsletter seeing as CZ can be a challenging stone when it comes to polishing. I don't have much experience to share, but this was my process.

I cut this stone using an Ultra Tec V5. I roughed the stone in using a 260-grit topper on an aluminum master lap and placed my facets using a 600-grit topper. I debated going to a 1200-grit topper next but I have heard mixed reviews on how well they work. In the end, I decided to try it and learned a valuable lesson. You can't use a brand new 1200-grit topper after a worn in 600-grit lap. I should have burnished the 1200 before using it but as the title suggests...beginner here! The 1200 really gouged up a facet so I took that topper off and I made a choice to go straight to polishing from the 600 and it worked! I polished the stone using 60k Diamond and Snake Oil on a BA5T. I kept my lap running between 500-600 rpm for the polishing. I'm not saying these are the best choices by any means, but they worked for me here! I think my success in polishing this stone came more from patience and persistence than any real skill, but I learned a lot along the way in terms of getting just the right amount of oil and polish on my lap. That really made all the difference because there were times where no matter how many passes I gave the stone the facet just wasn't polishing up how I wanted, but after wiping the lap down with some oil and adding just a touch more polish I could have facets looking great with only a few passes!

It didn't take long to learn that this was more about finesse than force because when I had it right, I barely needed to apply any pressure to get a beautiful polish.

Something else I learned while polishing this stone was that if one facet was really giving me trouble, I could move on and come back to that one later! I found myself spending less time frustrated that way and in those instances for whatever reason, maybe the oil on my lap was redistributed or some swarf was cleared away, but that facet wouldn't give me as much trouble when I went back to it later!

I have much yet to learn and look forward to doing so. I hope my experience can help some other beginner faceters along their journey!



And one final lesson--I broke the culet off this purple stone. It broke as I was taking it off the cone dop because I didn't let it soak long enough in the acetone when it was all done. I think that is a great piece of advice for beginners! You have to be patient otherwise all those hours you spent cutting and polishing might not get you what you wanted in the end! I do still love how the stone came out and most people I show it to don't even realize it's chipped until I point it out!

Ruination

by **Graham Sherar**

I have a “munted stones tomb jar” in my faceting box. When a stone is ruined beyond redemption it goes in the drawer of my faceting desk in a vessel, I call it my “tomb jar.”

The Collins Dictionary describes the slang word ‘munted’ as “An object destroyed or ruined” (New Zealand), or “Messed up” (Australian).

During my Apprenticeship, my employer had one rule which applied to every job I touched in the laboratory, “If in doubt, don’t.” My employer’s name was Arthur, and in our workplace this mantra was referred to as “Arthur’s Rule.” It goes something like this when applied to a faceter’s thought processes during a not too successful cutting session:

“Will I give it one more sweep across the cutting lap before I pre-polish? Yes, I think I will, I probably shouldn’t but here goes, BUGGER, I SHOULDN’T HAVE DONE THAT! I’ve over cut the facet now and ruined the stone, if I recut it now, it will be below the minimum size required for the Competition. It’s stuffed beyond salvation. Ruined!! If only I hadn’t confused myself...”

Isn’t hindsight a wonderful thing? In the back of your mind, you know you shouldn’t do it, but you go ahead and do it anyway. Mistakes should be treated as learning experiences, but we don’t always see them this way.

When I was learning to facet, my teacher told me that an emphasis on more looking than cutting and erring on the side of CAUTION is the key to preventing this situation! We know that, but sometimes in the confusion of a cut we forget such basic principles of our craft and throw caution to the wind. We confuse ourselves, often, with devastating consequences! I’m sure many of

our Guild members will be able to relate to this situation! I admit to my own guilt!!

When I started faceting, I bought a used machine. I chose to blame the machine when things went wrong, it **MUST** be out of alignment, it can’t possibly be my fault that I can’t cut a decent stone on this machine. I was told by numerous experienced faceters that it was more likely that I was the problem and not the machine. I refused to believe the doubters until the day when I cut a reasonable quality stone on that machine more by accident than design! Lesson learned, they were right, and I proved myself wrong!

When faceting, destruction of a stone is easily achieved in multiple ways, causing the stone to be wrecked or ruined. The list of ways in which a faceter can cause so much damage to a stone that it cannot be salvaged or no longer exists are endless.

An irrecoverable state of devastation and destruction can be accomplished in multiple ways, without even trying. “That stone will be my ruination” (or words to that effect), the faceter said whilst walking away from the machine in disgust. Does this scenario sound familiar to you? Been there, done that?

I will admit to having walked away from my machine in disgust several times whilst muttering “Arthur’s Rule” under my breath, “If in doubt don’t,” but during that faceting session I ignored Arthur’s Rule during a momentary brain-fade and paid the ultimate price for my folly. Another munted stone for the “Tomb Jar.”

Don’t be confused. If you do decide to give that stone one last touch on the cutting lap before progressing to pre-polish, at least touch it on the inside of the lap where the lap speed is around one third of the lap speed near the outer rim on

your 6-inch laps; at least the damage to your stone will be kept to a minimum! Or better still, follow Arthur's Rule and wait to refine that facet with the less aggressive pre-polish lap!! Err on the side of caution! Play it safe, rather than being sorry after the event.

Why not give "Arthur's Rule" some practice with one, or both of the attached designs.

Akhavan's 'Ruination' and Henk Prins' 'Confused'.

In February 2015 Arya Akhavan wrote the following about "Ruination," one of the designs from his "Temple Ruins" series:

"Here's the simplest possible iteration of the Temple Ruins' series. It may be a simple round with what technically qualifies as a triangle checkerboard crown ... but it performs extremely well in small and large rough and is a very easy and fast stone to cut."

Arkhavan's diagram for "Ruination" is included in this Edition of *The Midwest Faceter*.

"It takes 20 years to build a reputation and five minutes to ruin it. If you think about that, you'll do things differently." – Warren Buffett

Henk Prins' diagram for "Confused" is also included in this Edition of *The Midwest Faceter*.

NOTE CONCERNING "CONFUSED": This design will not be easy to cut and would probably make a good Open Section stone for a Competition.

"The most confused we ever get is when we're trying to convince our heads of something our heart knows is a lie." – Karen Moning

TIP:

Good rough is expensive, too good to waste. If I wish to cut a new and/intricate design or an unfamiliar design for a Competition I will often do a Test Cut in Borosilicate Glass before tackling the "real thing" with my expensive rough.

Borosilicate glass is readily available and reasonably inexpensive. I purchased ten, 290 mm long rods of it recently from an art glass supplier for \$30.00 AUS (around \$20.00 US) including the postage and packaging; to put that in perspective, to cut a 9 mm diameter Standard Round Brilliant (SRB) the material cost is circa 2 cents.

The material is readily available in sheet and rod form in a range of sizes. The rods are also available in a wide range of colors. Borosilicate glass is often sold under the name "Art Glass."

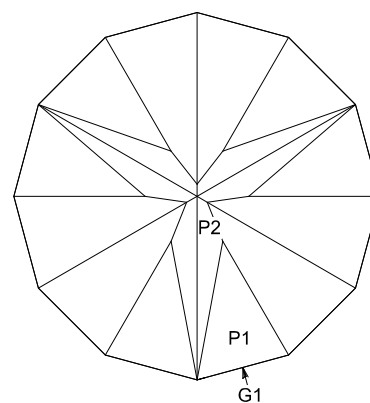
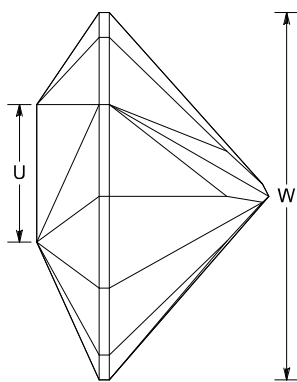
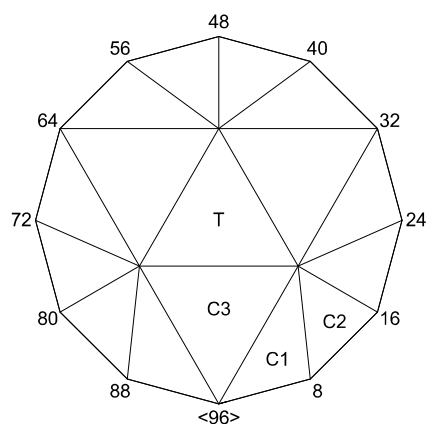
The Material Safety Data Sheets (MSDS) I consulted concerning the material suggested that the only concern for us is similar to cutting Quartz, always cut and grind using water to alleviate dust. The slurry we create during faceting is not considered hazardous.

Arya Akhavan's "Ruination" cut by the writer in Borosilicate Glass sitting on a Dichroic X-Cube:



"We don't stop playing because we grow old; we grow old because we stop playing." – Celtic Quote by George Bernard Shaw

Happy Faceting & Playing!



Ruination

by Arya Akhavan (February 2015)

Angles for R.I. = 1.540

34 + 12 girdles = 46 facets

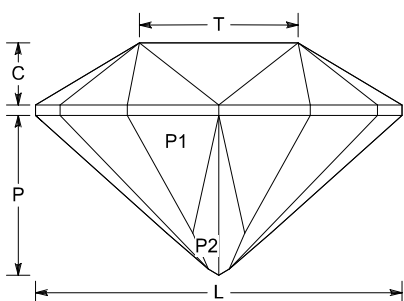
3-fold, mirror-image symmetry

96 index

$L/W = 1.000$ $T/W = 0.433$ $U/W = 0.375$

$P/W = 0.436$ $C/W = 0.170$

$Vol./W^3 = 0.198$



PAVILION

P1 42.83° 04-12-20-28-36-44-52-60-68-76-84-92 Cut to centerpoint.

G1 90.00° 04-12-20-28-36-44-52-60-68-76-84-92 Set stone size.

P2 41.33° 02-30-34-62-66-94 Meet P1, G1

CROWN

C1 29.03° 04-28-36-60-68-92 Set girdle width.

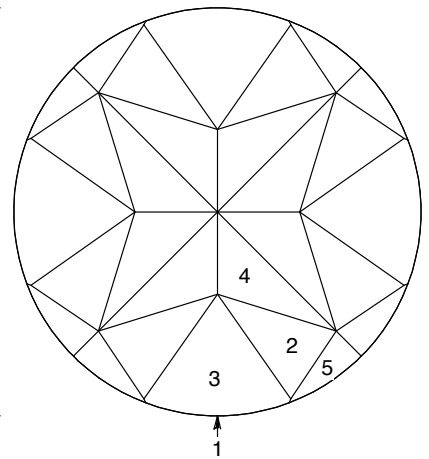
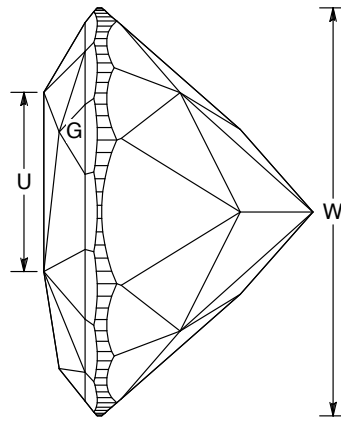
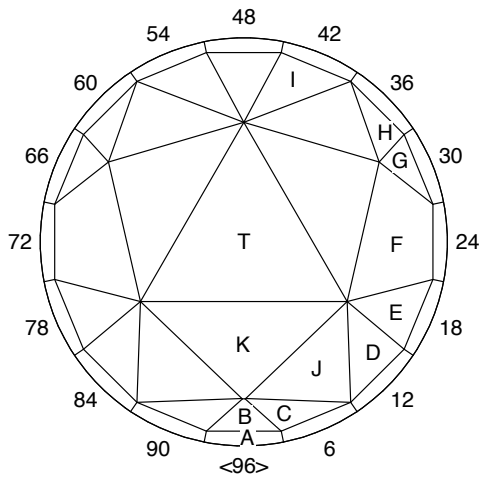
C2 35.14° 12-20-44-52-76-84 Level girdle.

C3 24.38° 96-32-64 Meet G1, C1; C1, C2

T 0.00° Table Meet C1, C2, C3

Here's the simplest possible iteration of the "Temple Ruins" series of designs. It may be a simple round with what technically qualifies as a triangle checkerboard crown...but it performs extremely well in small and large rough, and is a very easy and fast stone to cut. Works in materials from quartz to rutile (RI = 1.54 - 2.62) with no changes, but does really well in smaller Montana sapphires or Tunduru gravel.

C:\Users\ARYADE~1\Pictures\Gems\DESIGN~1\WORKSI~1\Done\13RUIN~1.GEM



Confused

Mixed Symmetry collection
by Henk Prins , May 2018.

Angles for R.I. = 1.720

68 + 96 girdles = 164 facets

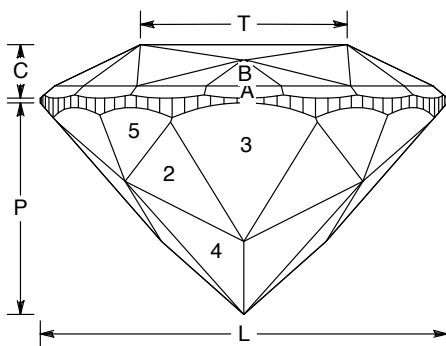
16-fold radial symmetry

96 index

$L/W = 1.000$ $T/W = 0.507$ $U/W = 0.439$

$P/W = 0.519$ $C/W = 0.131$

$Vol./W^3 = 0.238$



PAVILION

1	90.00°	(96 total)	Roll to size
2	45.63°	03-21-27-45-51-69-75-93	Cut to TCP
3	48.82°	96-24-48-72	Cut to 50% W
4	42.40°	04-20-28-44-52-68-76-92	Meet 2-3-2
5	62.16°	09-15-33-39-57-63-81-87	Meet 2-4-4-2

CROWN

A	40.00°	96-06-12-18-24-30-36-42-48-54-60-66-72-78-84-90	Cut an even girdle
B	38.64°	96	Set width of tier
C	30.53°	06-48-90	Meet A-A-B
D	29.13°	12-84	Level tier
E	30.17°	18-78	Level tier
F	25.64°	24-72	Level tier
G	37.57°	30-66	Level tier
H	34.83°	36-60	Level tier
I	27.56°	42-54	Level tier
J	24.81°	08-40-56-88	Meet C-A-A-D
K	9.00°	96-32-64	Meet J-C-B
T	0.00°	Table	

C:\Users\henks\Dropbox\GEMOLO~1\CONFUS~1\Confused.gem

Joining Hands

A reminder

By the MWFG Board



Image created in Adobe Firefly

As you recall from the previous issue, we established collaboration between the Midwest Faceter's Guild and the Columbia-Willamette Faceters' Guild in Oregon. We encourage members from each Guild to consider joining the other, thus leveraging the array of benefits that both organizations offer. Discover more on the CWFG website: <https://facetersguild.com/>

Here's some key information for MWFG members who are interested in joining CWFG:

1. *Both Guilds will utilize newsletters and meetings to highlight the opportunity for members to pursue dual membership. Interested individuals can submit their dues to each Guild independently through their respective websites.*
2. *CWFG's annual membership fees are \$25 for individuals and \$30 for family memberships.*
3. *While it's not mandatory to join both Guilds, those with memberships in each are strongly encouraged to engage with the activities and take full advantage of the resources available*

on both Guilds' websites.

4. *Although the MWFG and CWFG function independently, this collaboration is designed to foster joint initiatives and connections between the two groups.*

MWFG members stand to gain several benefits by joining CWFG:

- *The chance to participate in monthly Zoom meetings, featuring intriguing guest speakers, held at 7:00 p.m. PDT. These engaging sessions typically last 1 to 1½ hours (corresponding to 10:00 p.m. Eastern Time).*
- *Access to their monthly publication, FACETS, which provides new gemstone faceting designs in every issue.*
- *Opportunities to compete for the Al Gerding Novice Faceting Award, tailored for beginning faceters.*
- *Eligibility for the Merle Reinikka Founder's Award, aimed at those who have previously secured the Al Gerding Novice Award.*
- *An array of faceting articles and resources available on the CWFG website.*
- *Exclusive access to faceting diagrams crafted for member use.*
- *For those in the Portland, Oregon area, the opportunity to attend faceting classes offered by CWFG at the Rice Museum during autumn and winter.*

To join the CWFG, visit their website directly or access it via the MWFG webpage. We are confident that this partnership will prove advantageous for both Guilds. United we stand stronger, and this collaboration exemplifies the power of unity.

Joke for Faceters

A group of faceting friends went on a camping trip. They decided to split up and gather firewood for the night. As they were gathering wood, one of the friends heard a strange noise. He turned around and saw a large bear coming towards him. He immediately started to run, but the bear was too fast and caught up to him.

The bear raised its paw to strike, but the man yelled, "Stop! I'm not the type of bear food you want to eat. I'm a talking bear!" The bear was surprised and said, "You're a talking bear? Well, in that case, let's have a chat."

So, the man and the bear sat down and had a conversation. After a while, the bear said, "You know, I don't normally do this, but would you like to come to my cave and meet my family?" The man agreed and followed the bear to his cave.

As they were walking, the man thought to himself, "This is amazing! I'm friends with a talking bear!" But then he remembered the other friends he was camping with and thought, "They'll never believe me." Just then, he heard a rustling in the bushes behind them. He turned around and saw one of his friends holding a rifle.

The friend said, "I'm sorry, but I have to do this. You can't just go around making friends with bears." And with that, he shot the bear. The man was devastated and said, "Why did you do that? He was my friend!" The friend replied, "That wasn't a bear, that was just a guy in a bear suit."



A member of the MWFG walks into a bar with a dog. The bartender says, "Hey, you can't bring a dog in here!" The man replies, "But this dog can talk!" The bartender is skeptical but decides to humor the man. "Okay," he says, "let's hear what the dog has to say." The man asks the dog, "What's on top of a house?" The dog replies, "Roof!" The bartender is unimpressed and says, "That's not talking, that's just barking." The man tries again. "Okay, what's sandpaper like?" The dog replies, "Ruff!" The bartender is even less impressed and says, "That's still not talking." The man tries one more time. "Okay, who's the greatest baseball player of all time?" The dog replies, "Ruth!" The bartender has had enough and kicks them both out. As they're walking away, the dog turns to the man and says, "Maybe I should have said DiMaggio?"



Images created in Adobe Firefly

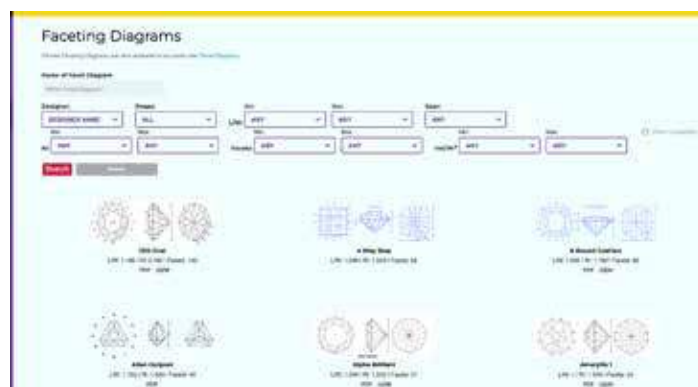
Adapted from Tag Vault Blog

Faceting Diagrams

IN THE past, *The Midwest Faceter* included faceting diagrams. Rather than selecting diagrams that may or may not be appealing to the membership, you can select the faceting diagram of your choosing from several sites that have a multitude of designs. [A note to gem designers-If you use Gem Cut Studio or GemCad, create your own designs, and would like to share with Guild members, just send a PDF of your design to the Editor and it can be featured in the next *The Midwest Faceter*.] As a member, if you cut the design and you would like to send in a picture of your gem, look what we could start!

The Faceting Diagram Website: <https://www.facetdiagrams.org> has now been taken over by the US Faceters Guild. It remains free and US Faceters Guild has cutting diagrams too but you must be a member, which is \$18 per year.

The United States Faceters Guild Website: <https://usfacetersguild.org>



Tom Herbst, the author of *Amateur Gemstone Faceting, Vol. 1 and 2*, has a website with some faceting diagrams. His website is: <http://boghome.com/TomsPages/MyDesigns/index.html>

Tom's Original Gem Designs

	BBS - A simple, stretched, triangle cushion BOG-optimized for beryl
	BluZerk - A keystone design optimized for zircon
	Eigam - A spiral round BOG-optimized for tourmaline
	Fritz - An unusual reflector BOG-optimized for tourmaline
	Green Flash - An interesting sunburst design - BOG optimized for Peridot
	Hexpo - A very lively hexagon for tourmaline NEW! USFG optimized version available
	Integral-8 - An asymmetric round with lots of sparkle - shown here in tourmaline
	Keystar - A keystone with starburst for tourmaline
	North by Northwest - A simple yet sparkly design, optimized for tourmaline
	O-Pace - A frosted design with a message - optimized for Contra-Luz Opal
	Sepang - An unusual pie-shaped design. BOG optimized for garnet
	Tearhuncle - A fast and simple teardrop BOG optimized for garnet
	Topo - A very flashy checker-board design BOG optimized for topaz
	Trigger - A striking geometric triangle cushion BOG optimized for tourmaline
	Tris de Garnet - Simple yet very lively design for garnet



Shape?

L&S code

Design name

Designer

Reference

Publication year

Index year

L/W

H/W

Vol/W

Show designs added

☒ Only show Open designs (with GemCad ASC files and cutting instructions)

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