

the
New Mexico

Facetor

March/April 2005



The Official Newsletter of the New Mexico Faceters Guild

NMFG *Show and Tell*



Stunning aquamarine by
Nancy Attaway.



Suite of bi-color tourmaline earrings, pendant and unset stone.
Nancy Attaway cut the stones and **Steve Attaway** set the stones
in his custom designs.



Gorgeous large heart-shape Tanzanian rhodolite garnet by **Ernie Hawes** that was featured in the February 2005 issue of Lapidary Journal.

The New Mexico Faceters Guild

Guild Officers 2004-2005

President: Dylan Houtman
Vice President/Programs: Ernie Hawes
Secretary/Treasurer: Bill and Ina Swantner
Guild Gemologist: Edna Anthony
Guild Mineralogist: Paul Hlava
Workshop Chairman: Ernie Hawes

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Newsletter Production:
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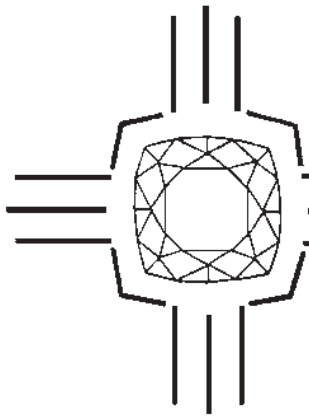
Purpose of the Guild: The purpose of the New Mexico Faceters Guild is to bring together persons who are interested in faceting or faceted stones. We promote the art and science of faceting and provide a means of education and improvement in faceting skills. Finally, we provide a means of communication between those persons involved in or interested in faceting as a hobby.

Guild Membership: Dues are \$20.00 per calendar year (January through December) for newsletter issues sent by e-mail. Hard copies of newsletter issues sent by US mail are \$30. Please see the membership application/renewal form on the last page of the newsletter.

Meetings: The Guild meets now on the second Monday of odd numbered months at 7:00 p.m. at the New Mexico Museum of Natural History, 1801 Mountain Road N.W., Albuquerque, NM. Workshops are generally held in even-numbered months. Date, time, and place are given in newsletter. Also, any change in guild meeting times or dates will be listed in the newsletter.

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The next meeting of the New Mexico Faceters Guild will be May 9, 2005.



The New Mexico Facetor

Volume 25, No. 2, March/April, 2005



NMFG Editor Carsten Brandt

The Ed Sez:

by Carsten Brandt

Hi all,

After some delay, the newsletter is finally done. The print version will come from a new printer as our long-time printing place (Wild Rice Press, Inc.) has closed up to pursue other business opportunities – one of which is “Katzima Farms Fine Hand-Crafted Soaps”. We wish them the best and thank Janie for the great job she has done over the years with printing our newsletter. As of this writing, I’m not sure where we will print this and future editions, but by the time you hold your copy in hand, this issue will have been solved.

One of the reasons this issue is late is that I had a custom order for an engagement ring. I cut and set three stones over the last couple of weekends. All three stones are cut from synthetic Alexandrite, a truly lovely material; I purchased my rough from “All that Glitters” as they had a great price and very good quality; they buy leftover Czochralski boules from the laser industry, cut them into manageable chunks and sell them as faceting rough. With a hardness of 8.5 Moh’s, I had expected some difficulties, but it actually cut very nicely. I had ordered a ceramic lap three months ago for polishing, but when it finally arrived, the stones were done. Polishing on a meehanite lap didn’t work too well, probably because it isn’t worn in yet and because of my lack in experience using diamond for polishing – so far I had always used my Cerium Oxide and Alumina Dynalaps. As I had to order diamond powder anyway, I also bought a Batt lap and that lap saved me. After pre-polishing on a 3K Dynalap, the Batt lap, charged with 50K diamond did a fast and wonderful polishing job. The stones turned out beautifully, a 3.25ct Barion oval and two 3.9mm Mini Barion triangles. I can’t wait to cut another stone from this great material.

Happy faceting,
Carsten

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New Mexico Faceters Guild Official Website

We invite everyone to visit our website at: www.attawaygems.com/NMFG for interesting and informative articles on gemstones and faceting techniques.



Minutes of the NMFG Meeting

April 11, 2005

by Nancy L. Attaway

The New Mexico Faceter's Guild met April 11, 2005 at its usual meeting place in the Museum of Natural History. The Guild meeting that had been scheduled for March 14, 2005 was cancelled, due to a sudden and heavy snowfall. A spring snow storm dropped six to eight inches of heavy, wet snow in Albuquerque and left nearly three feet of snow on the East Mountain communities. Nancy Attaway and Ernie Hawes decided that this snow storm made driving in the Albuquerque area much too risky and called members at their homes to tell them the meeting was cancelled.

The museum granted us permission to reconvene April 11. Thank you, **Ernie Hawes** for arranging the April 11 meeting.

President **Dylan Houtman** called the meeting to order at 7:20pm, after a lively pre-meeting discussion, and welcomed members and visitors. He then asked everyone to introduce ourselves to the group.

Old Business:

Nancy Attaway mentioned that **Dylan Houtman** and **Ernie Hawes** demonstrated faceting during the **Treasurers of the Earth 2005 Expo**, the three-day gem, mineral, and jewelry show hosted by the Albuquerque Gem and Mineral Club on March 18, 19, and 20. Dylan and Ernie talked to many people during the show and signed up several new persons for membership in the Guild. Thank you, Dylan and Ernie.

Paul Hlava, who served as Dealer Chairman for the show, related that the event was a great success. He said that many dealers praised the show. The gem and mineral displays received a lot of attention,

especially the two display cases by the New Mexico Faceters Guild. One held **Scott Sucher's** sixteen replicas of famous diamonds, and the other showed **Scott Sucher** and **Nancy Attaway's** replicas of the Tavernier, the French Blue, and Hope Diamonds with associated photos and diagrams.

Nancy Attaway discussed the last workshop held at the home of **Steve** and **Nancy Attaway** on March 5. Since March 5 was Nancy's birthday, she decided to celebrate with a feast. Steve and Nancy cooked in Dutch ovens a pork roast and scalloped potatoes with green chile and roasted garlic. Nancy baked a chocolate cherry cake and a pineapple upside-down cake, baked bread, and made gravy for the pork roast. Iced tea and coffee were also served. The Attaways had received a complimentary copy of the DVD of the Hope Diamond television show that had been aired during mid February on the Discovery Channel, and this DVD was shown during the morning session of the workshop. Purchases of gem rough from Tucson were also shown and discussed during the morning session, as folks shared their experiences. All who attended the workshop faceted their stones during the morning and afternoon sessions.

New Business:

Workshop Chairman **Ernie Hawes** announced that the next Guild Workshop will be held on May 7 at the home of **Jeff Jaramillo** in Los Lunas. Ernie will send an e-mail announcement with directions.

Ernie Hawes announced that he is now a dealer for AmeriTool, Inc. selling their laps. He said that **Nancy Attaway** purchased two of these laps, a 600-grit and a 1,200-grit lap. These laps have a hard plastic base with a diamond-impregnated thick plate glued on top. The laps run true and cut flat facets.

Refreshments:

Tonight's refreshments were provided by **Deb Owen** and **Nancy Attaway**, who both baked chocolate cakes. Gourmet coffee was also served. Thank you very much. **Betty Annis**, **Linda Vayna**, and **Becky Hawes** all volunteered to bring refreshments to the meeting on May 9. **Deb Owen** and **Nancy Attaway** will bring refreshments to the meeting in July.

Show and Tell:

The Show and Tell Case tonight was filled to capacity and literally overflowed with faceted gemstones. It was a truly remarkable sight with lots of eye candy for everyone.

Dylan Houtman displayed over twenty stones that he recently cut. He showed a lovely large, champagne yellow, round Mexican labradorite that he cut in a 24-sided round, somewhat like the twelve-sided Flasher Cut round but doubled and with more tiers. We will ask Dylan to furnish the faceting diagram of this beautiful round design for a future issue of *The New Mexico Facetor*. Dylan showed a gorgeous small standard round brilliant (SRB) benitoite, two small lively SRB sphenes, two deep red rutiles, a large triangular sphalerite, a red spinel kiteshape, two SRB red spinels, a gorgeous blue spinel Flasher Cut round, two bright orange SRB Mandarin garnets, a light aqua blue Flasher Cut tourmaline, and a triangular diaspore. He showed a beautiful color-change garnet, a large tanzanite, and several stunning color-change cubic zirconias, all cut in a new cushion square that he just designed. This new design for a cushion square has a culet point and exhibits a lot of sparkle. We would also like to ask Dylan to furnish the cutting instructions for this wonderful design for a future issue of *The New Mexico Facetor*. Dylan's color-change cubic zirconias wowed the audience with their sparkle and bright colors.

Dylan is an amazing and prolific faceter who is not afraid to facet anything that could be termed gem material. His advice to beginner faceters is to *jump in there and cut*. Dylan impresses all with his faceting talent and inspires us with his cutting energy.

Ernie Hawes displayed "the" gorgeous large heart-shape Tanzanian rhodolite garnet that was featured in the February 2005 issue of *Lapidary Journal*. He also showed two cubic zirconia rounds that he cut in his new 15-main round design, slated for an issue of *Lapidary Journal* this year. He said that he used "Love" angles for this design and remarked that Love even specified the size of the table facet in his angle recommendation table.

Becky Hawes displayed an emerald cut, deep green, octagonal gemstone of a synthetic gem material and a Flasher Cut round peridot. These gems are Becky's first stones that she has faceted, and it appears that she is off and running with her faceting talent. We will certainly look forward to seeing more gems cut by her this year.

Carsten Brandt displayed his large and beautiful citrine that he cut in the Portuguese Cut, a sixteen-sided round with many tiers. (Every faceter should cut a Portuguese Cut round at least once in their lifetime.) Carsten also showed a large trapezoidal shaped clear quartz that he purchased on a recent trip to Idar Oberstein, Germany. The cutter (Mr Gordner) of this remarkable gemstone used the traditional stone cutting techniques that involved addressing the hand-held gem material on 4 to 5 foot diameter sandstone wheels turned by a watermill. Polishing is done on wooden wheels using clay and slate slurries. The amazing accuracy of the parallel step cuts and the good polish achieved is a testimonial to the talent of this German faceter, and everyone who saw this stone marveled about the skill of Mr. Gordner who used no dops, faceting diagrams or magnifying glasses in cutting this gem.

The Owen Family: What a remarkable group of faceters the Owen family is. New to faceting, they purchased a faceting machine and are now cutting the gem material that they collected over the years.

Father, mother, and son are all very active faceters. They are a welcome addition to the New Mexico Faceters Guild.

Oldest son, **John**, displayed a Flasher Cut round citrine, his first gemstone, and a lovely, large pink cubic zirconia in a round design that he developed.

The Mom, **Deb**, displayed her first gemstones, an SRB amethyst and Apache tear obsidian from Tent Rocks, New Mexico.

The Dad, **Wesley**, displayed 15 Apache tear round obsidians from New Mexico, a round in bottle glass, and an interesting red jasper with a round pavilion and a square crown.

Jeff Jaramillo displayed every one of the lovely gemstones that he has cut. Jeff is a new faceter who also has some amazing faceting talent. He showed a pearshape peridot, a Flasher Cut round and a triangle in mint green grossular garnet, a large Madiera citrine Flasher Cut round, an amethyst Flasher Cut round, a dark hot pink Flasher Cut round tourmaline, a very large kite shape golden beryl, an emerald cut with step cuts in yellow beryl, a lozenge shape and an antique oval in deep blue tourmaline, a lavender oval spinel, a large chrome diopside square, a small Arizona "ant hill" red garnet, a round and an antique oval in blue spinel, a round Oregon sunstone, a round Mexican labradorite, and a large octagon and a round in Tanzanian rhodolite garnet. Wow! Jeff is just beginning, and he will have more gemstones to show as the year unfolds.

I will break here to comment on our faceters. The New Mexico Faceters Guild has never seen such an impressive array of gemstones on display in our many years as a faceting guild as we have seen tonight. I think that I may speak for everyone in saying that we were all very impressed by the selection of the gem material and the faceting talent expressed in the gemstones. The enthusiasm for faceting was certainly alive at this April meeting. Congratulations to everyone! I would also let everyone know that, besides the very talented

gentlemen faceters that we have in the New Mexico Faceters Guild, I am very happy to see so many lady faceters now cutting gemstones. **Deb Owen** and **Becky Hawes** are a wonderful addition our group. I would also have everyone know that two other women are faceters in the Guild. These ladies are **Elaine Weisman** and **Linda Vayna**. Elaine facets and is an accomplished metal smith. **Steve Vayna** recently purchased a Facetron for Linda and surprised her with this fabulous birthday present. Linda is currently working on two Flasher Cut rounds in amethyst and in labradorite, so look for these in the Show and Tell Display case this year.

I am also impressed with the helpful nature of the faceters in our guild. I have noted how our faceters graciously provide faceting advice and helpful tips to others when asked, while giving praise and compliments. Thank you all for your involvement in faceting, your gem and mineral knowledge, and your jewelry making skills. And, for tough questions regarding crystal and atomic structure of gemstones, color in gemstones, and such related gem and mineral topics, we have our resident Guru, **Paul Hlava** to answer those questions. Thanks, Paul. Now, back to Show and Tell.

Nancy Attaway displayed nineteen loose gemstones that she recently cut, with eight other gemstones set into jewelry. She showed a very large emerald cut, two medium sized emerald cuts, an octagon, a square barion, and four rounds, all in red tourmaline Nigerian liddicoatite. She showed a medium sized bi-colored Nigerian tourmaline with pink and green hues, and a very large emerald cut bi-colored Nigerian tourmaline that was mostly hot pink with a narrow strip of green at one end. She showed a large emerald cut Ukrainian golden beryl, two emerald cut aquamarines, one wide emerald cut aquamarine, a large cushion emerald cut aquamarine, and two large aquamarine faceted tablets. She showed one round, two matching rounds, and two large rounds, all Flasher Cut rounds of Tanzanian rhodolite garnet. She also had two matched pairs of large Flasher Cut round Tanzanian rhodolite garnets set into 14Kt yellow gold earring studs.

Steve Attaway displayed several carved Namibian chalcedony pieces, cabochons and freeforms, which showed the deep denim blue hue that Namibia chalcedony is noted for. Steve had carved one of the pieces into a large butterfly. He had set two of his chalcedony oval cabochons into custom 14Kt. yellow gold earrings accented by four 3x3mm Princess Cut rhodolite garnets, three at the bottom and one on top. Steve explained that he had purchased at Tucson a parcel of robot-cut 3x3mm Princess Cuts in rhodolite garnet, Madeira citrine, and amethyst. Steve then showed two 14Kt yellow gold pendants, one with an emerald cut blue Nigerian tourmaline that Nancy cut and one with a bi-colored tourmaline, in pink and green hues that Nancy also cut. Both pendants had Steve's new bail design with pave diamonds and his new idea of flush setting a diamond on each side of the head that holds the emerald cut gemstone. Steve also showed the 14Kt. yellow gold earrings that he made for the two matched emerald cut bi-colored Nigerian tourmalines, in pink and green hues, that Nancy cut. The earrings are accented by three diamonds at the bottom, and diamonds were flush set on the sides of the head that holds the gemstones.

Regarding robot-cut gemstones, **Ernie Hawes** commented that he saw at Tucson an automated faceting machine by KLM Technology that used two laps and could facet several stones at once; priced at \$10,000.



Program Speaker

by Nancy Attaway and Carsten Brandt

Dr. Marc and Elaine Price presented, "Adventures in Australia - Down Under" that related events of their recent trip opal hunting to Australia. Marc explained opal mining and provided advice on what to look for when buying opals. He focused mainly upon opals from Lightning Ridge and his experiences while there.

Marc stated that of all the gemstones found in Australia, including sapphires, zircons, topaz, and even gold, it is opal that the world recognizes as the premier gemstone of Australia. Marc said that opal has been used in jewelry for well over 4,000 years, and that opal jewelry had been found buried in ancient tombs in several of the world's opal producing areas. He stated that Lightning Ridge produced Australia's best black opal, precious opal with a very dark body tone and blazes of color hues.

Lightning Ridge lies in New South Wales, in southeast Australia. During the Jurassic and Cretaceous Periods, 70 to 200 million years ago, a huge, shallow inland sea developed mostly inside the eastern half of Australia's continent. This area, which was to become the opals fields of Australia, is known as the Great Artesian Basin. During the Tertiary Period, 37 to 70 million years ago, the Earth's climate changed, and the sea receded. The basin eventually turned to desert. The water left layer upon layer of sedimentary deposits of shales, limestones, and sandstones, with the bodies of sea creatures buried within some of those layers. Over time, silica worked its way into the many layers and replaced buried wood, shell, and bone to form opalized fossils. The silica that was more heavily concentrated, trapped in-between the hard clay layers, formed microscopic spheres. A long and steady rate of silica deposition produced spheres of uniform size and shape and formed precious opal. Many of Australia's most famous opal mines lie on or near the southern shore of the Great Artesian Basin's ancient shoreline. Lightning Ridge lies inside the southeastern corner of the Great Artesian Basin.

Marc and Elaine traveled to Australia, their most recent trip, during the winter of 2004. Elaine was born in Australia, and the Prices have family and friends there. They arrived in Sidney and traveled to Lightning Ridge to visit a few mining friends. Marc showed pictures of some of the opal mining claims above ground and below the surface. He explained some of the mining techniques and equipment used in the extraction of opal at Lightning Ridge.

Marc described how one would begin the search for opal. He said that the old time opal miners would look for a certain tree that grew in soil containing opal. Modern methods involve looking for slips, the joints, cracks, or vertical openings that had initially allowed the flow of groundwater. Some miners still use the dousing method, a method used in locating groundwater that is still in use today. A miner would walk while holding two metal divining rods in parallel. The rods then respond to the presence of subsurface water by swinging together or pulling apart. Much of the opal found at Lightning Ridge is located in seams underground. After a miner stakes a claim, he then sinks a shaft nearby. Marc said that those shafts ran as deep as sixty feet.

Marc related that, until a few decades ago, tunneling was done by hand. Marc quoted a term used by opal miners, “hard yakka”, meaning hard work. He declared that opal mining was hard work using only picks and shovels. Now, miners use augers or large drills to dig shafts. Bulldozers opened cuts, and steam shovels removed the overburden to expose the seams close to the surface to begin mining. Miners also used explosives to enlarge tunnels and rooms. Marc’s photos depicted mining tunnels and the large rooms, called ballrooms, seen shored with timber. Hydraulic jacks with digger arms were taken apart and re-assembled underground to enlarge the tunnels, and Marc also showed photos of these. Miners ferried generators underground for powering lights and equipment. He said that miners worked the underground seams for opal by following the fault lines. Sometimes, miners found opal nodules, “nobbies”, in the clay layers. With all the modern equipment now in use, Marc stated that opal mining was still “hard yakka”. He remarked that several years could pass before a miner would see a profit from opal mining. The possibility of discovering an opal bonanza kept hopes running high.

Marc explained that many shafts were drilled with holes one meter in diameter. The miners would line these holes with drainage pipe and hang a metal ladder down the hole. Marc remarked that these ladders were sometimes precarious to descend and

ascend, because the rungs could become slippery. He said that miners used a pipe for a vacuum cleaner to muck out a hole or to bring opal-bearing material to the surface. Among the other dangers associated with mining shafts was the problem of subsidence. Cave-ins occurred when the shoring no longer supported the sides and roof of a mine shaft, and the mine tunnels collapsed. Flimsy corrugated sheet metal sometimes served as mine covers. Some mines had no covers at all. Since miners do not file accurate tunnel maps or surveys of their mining operations, dangers arose when one miner would set off explosives too close to another mine, not knowing he was so close to other tunnels. Marc told us that he was most careful where he tread on the surface to avoid falling into pits and holes. Even driving heavy equipment on the surface could trigger a collapse, if the driver was unaware he was above some old, unmarked diggings. Marc also mentioned the poisonous redback spiders that needed to be completely removed from a mine entrance. (Yuck, spiders.)

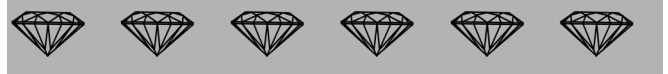
Marc further explained the mining process when opal-bearing material came to the surface by way of the vacuum pipe. The vacuum pipe emptied its contents into a metal hopper. When filled, the hopper’s load was deposited into a dump truck bed. When approximately ten tons of opal-bearing material was accumulated, dump trucks carried their loads to a tank. Tanks ferried the loads to a common area, where water has been captured by a dam, to be agitated in old cement trucks. With water sprayed on top of the agitator, the agitator tumbled the material to remove the clays and sands and then funneled the material into a large sorting tray. The miners referred to a cement trucks used as an agitator machine as the “Agi”. The agitation process could take as little as a few hours or require as much time as a week. Marc mentioned that all of the heavy equipment there used only diesel fuel. He said that he was granted permission to look for opals in the various dumps to “noodle around”. Marc said that smaller pieces of opal and some small nodules could be found by “noodling” in the dumps near the dam site.

Marc related tales of unsavory folks who would sneak at night into mining claims not their own to take opal. He said that miners called these folks “ratters”, and the deed of stealing opal from other claims was termed “ratting”. Ratting is seldom reported, as a ratter can steal thousands of dollars worth of opal in one nightly raid and only be fined for trespassing. As a consequence, miners police themselves and those who are caught ratting in their holes are dealt with appropriately. Marc also mentioned that Coober Pedy was aboriginal for dirt rat.

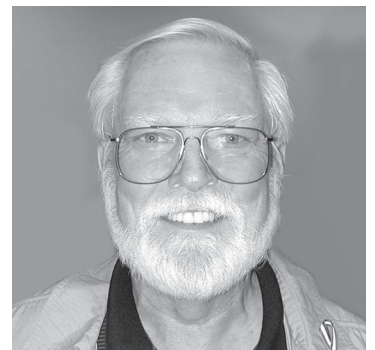
Marc enjoyed noodling around but ended up purchasing opal directly from the miners. He said that the miners usually kept the best opal for themselves. As he shopped for opal, Marc noticed that the miners displayed parcels of opals priced by the ounce and priced by the bag. Some individual opals even carried their own price tag, marked by the piece. Marc was also shown parcels of opal “rubs”, single pieces of opal where grinding removed the sands and clays to reveal more of the opal’s rich color. Marc described the various types of Australian opal as black, white, crystal, and boulder. Opal miners used a color base scale for opal that denoted an opal’s body tone, going from black to semi-black to gray to white, some with the color on top. Marc defined the brilliance of an opal as its intensity of color. He described an attribute of precious opal as having directionality, when a good play of color in intense hues occurs in all directions. Marc listed the color flash type seen in opal as pinfire (pinpoints of different color on a white base), broadflash (platelets of color in one direction), and checkerboard (harlequin patterns in all directions). He said that precious opal occurs in blue, green, and orange, but the most highly prized was red. Black opal is declared to be the most highly valued precious opal. Marc described jelly opal as solid opal having no base color or background. He mentioned that jelly opal is a good gem material for faceting.

Marc finished his formal presentation with a photo of the “Million and a Half Dollar Baby”, a 63 mm long fossilized opal squid tentacle with

extraordinary play of color. Much of the opalized fossils show intense play of color. Marc and Elaine fielded questions from the audience and then displayed their lovely opal purchases. Thank you, Marc and Elaine for a wonderfully entertaining discourse on your Australian opal adventures. {The writer wishes to acknowledge that she used references from Fred Ward’s excellent book, “Opals” for further clarification and descriptions. Thank you, Fred.}

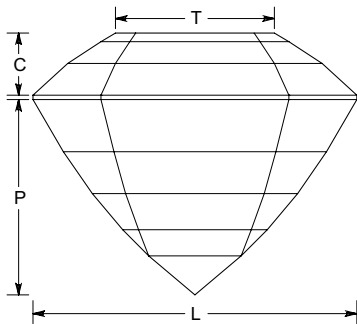
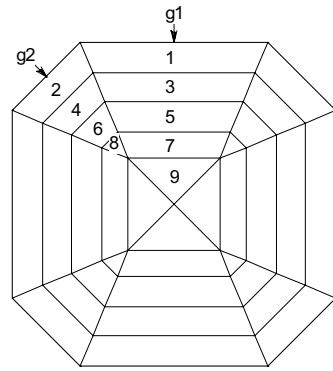
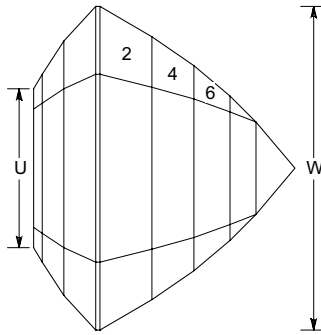
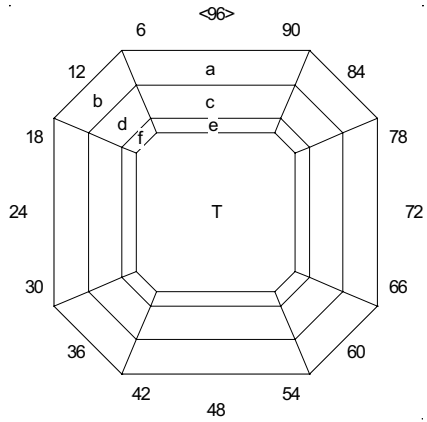


Facet Designer’s Workshop An Old Design Revisited and an Unusual New Pattern



By Ernie Hawes

A few months ago our Guild President, **Dylan Houtman**, was contacted by a German lady now living in New York. She was anxious to find a cutting diagram for the old Asscher cut. Her grandmother years ago in Germany had a ring with an Asscher cut diamond, and she wanted to cut a CZ in the Asscher cut to put into a ring for her sister. A revised Asscher cut has become popular in recent years, so I figured I could get some idea what this design looked like by doing a little research on the Internet. Sure enough, I found a website, diamondinfo.org, that had a brief history of the Asscher cut, and more importantly, a three dimensional drawing and a photo of a straight-on crown view of an Asscher cut diamond. From the drawing I was able to fairly easily come up with a reasonable facsimile of what the cut should look like in GemCad. I don’t know what the official angles are supposed to be, but I decided to apply Love angles and the rest was easy. The Asscher cut is really nothing more than a cut corner square



Asscher Cut Version by Ernie Hawes

Angles for R.I. = 2.160

61 + 8 girdles = 69 facets

4-fold, mirror-image symmetry

96 index

$L/W = 1.000$ $T/W = 0.491$ $U/W = 0.491$

$P/W = 0.603$ $C/W = 0.191$

$Vol./W^3 = 0.352$

PAVILION

g1	90.00°	96-24-48-72
g2	90.00°	12-36-60-84
1	60.00°	96-24-48-72
2	60.00°	12-36-60-84
3	55.00°	96-24-48-72
4	55.00°	12-36-60-84
5	50.00°	96-24-48-72
6	50.00°	12-36-60-84
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8	45.00°	12-36-60-84
9	40.20°	96-24-48-72

CROWN

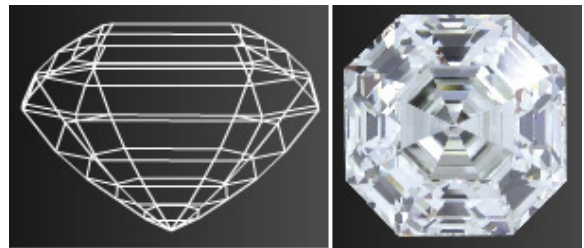
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b	43.00°	12-36-60-84
c	33.00°	96-24-48-72
d	33.00°	12-36-60-84
e	28.00°	96-24-48-72
f	28.00°	12-36-60-84
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"What is the Asscher Cut?"

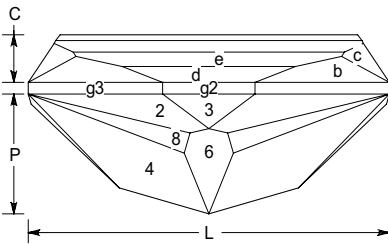
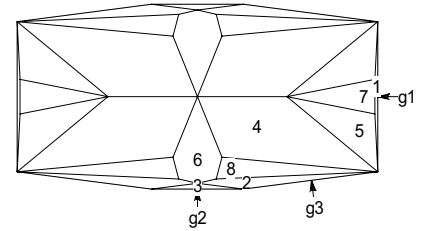
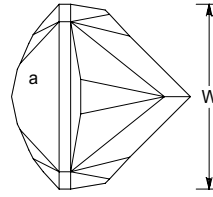
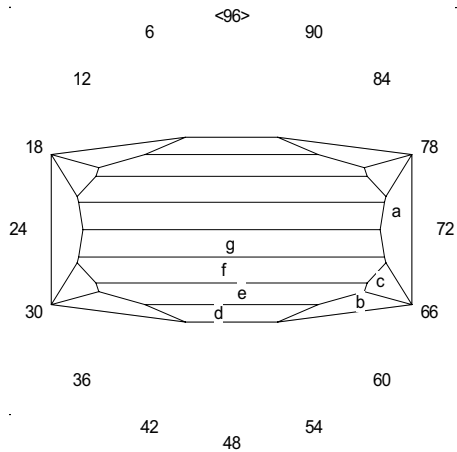
The **Asscher Cut** was developed by Joseph Asscher, who was commissioned by the Royal Family to cut the world's largest diamond in history; the 3,106ct Cullinan diamond. After which he invented the now-famous Asscher cut, this cut reached its peak of popularity in the 1920's in very limited production. Up until 2001, the Asscher cut was a hard to come by commodity and available mostly in antique shops or art deco jewelry dealers.

In 2001, the cut went through considerable research and development and was re-launched with new specifications and additional facets for a more brilliant shine. Now Asscher cuts have been revitalized especially with the increasing popularity of square shapes, princess and asscher cuts are in demand more than ever."

The modern Asscher cut:



Information copied from www.diamondinfo.org



Toppler

By Dylan Houtman

Angles for R.I. = 1.560

42 + 8 girdles = 50 facets

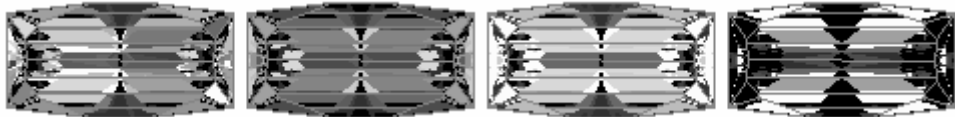
2-fold, mirror-image symmetry

96 index

L/W = 1.955

P/W = 0.650 C/W = 0.258

Vol./W³ = 0.899



Random

COS = 36.0 %

ISO = 63.6 %

Hints = 70.0 %

Scintillation = 30.0 %

PAVILION

g1	90.00°	24-72
g2	90.00°	96-48
g3	90.00°	02-46-50-94
1	70.00°	24-72
2	70.00°	02-46-50-94
3	79.33°	96-48
4	43.00°	05-43-53-91
5	43.00°	22-26-70-74
6	45.00°	96-48
7	43.50°	24-72
8	47.69°	04-44-52-92

CROWN

a	56.00°	24-72
b	52.00°	02-46-50-94
c	39.27°	06-42-54-90
d	42.00°	96-48
e	34.00°	96-48
f	24.00°	96-48
g	12.00°	96-48

emerald cut with five pavilion facets instead of the usual three. How it ever got patented is beyond me, but stranger things have happened. Anyway, I put together a one page work-up with my version of the Asscher cut drawing and the information from the diamondinfo.org website. I sent this to the German lady who was thrilled to get something she could use to cut a stone for her sister.

After telling a few guild members about this experience, I finally decided that I might as well put my version of the Asscher design and diamondinfo.org data in the newsletter. Just remember, emerald designs require special care in getting the facets to align with each other. Otherwise, this is an easy design to cut. For cutters who will only cut natural stones, there are some high RI natural materials besides diamond in which you can cut this, but obviously, I set it up for CZ. Either way, I think you can have some fun with this pattern.

Our second design is another of Dylan Houtman's creations. This is a long modified rectangular pattern that Dylan used originally to cut a piece of scapolite. However, I think it will work for any relatively low index material. The crown would suggest that this was an opposed bar design, but that is not the case. The bar pattern on the crown makes for some interesting reflections and adds to the design's scintillation. It isn't the brightest design you'll ever cut, but because of the scintillation pattern, I believe it will cut an attractive stone in light to medium colored material. This is not a meetpoint pattern, but if care is used in cutting the girdle outline first, it should present few cutting problems. This design should be ideal for a long piece of tourmaline, so long as the crystal has an open C axis. Otherwise, you might want to experiment in raising the angles at the ends of the pavilion by several degrees.

We had good turn out for our bi-monthly workshop recently. We met in **Jeff Jaramillo's** oversized garage in Los Lunas. An outstanding lunch was prepared for us by Jeff's wife and was truly appreciated by all. I showed the group how to create a preform for non-meetpoint designs using GemCad

and gave everyone a copy of the free DOS version of this program as well as a copy of the 30 day trial version of GemCad for Windows. I also gave them the DataVue2 design database and a program for estimating the size and weight of a stone cut in any design. This little program will tell you quickly whether you can cut a stone of a certain size in a specific piece of rough. Anyone who attended the workshop who would like more help with learning GemCad or how to use DataVue should feel free to get in touch with me. I will be happy to do a little tutoring on what I believe to be some invaluable faceting tools.



In the News

Canadian Sapphires

Source: Gems & Gemology Winter 2004

Two local prospectors discovered gem quality sapphires in 2002 when they investigated an outcrop southwest of the community of Kimmirut on the south coast of Baffin Island, Nunavut, northern Canada. To date, six corundum occurrences have been found over a distance of 390 meters. The original find, called Beluga, contains sapphires that exhibit a deep blue hue with violet overtones. Single crystals up to 7.7 x 2.1 cm have been unearthed, although most fall in the range of 15 x 4 cm. Some of the sapphires are colored zoned, especially the larger crystals, and display concentric, irregular, or end to end variations in hue. The smaller crystals are generally free of inclusions, whereas the larger crystals are often fractured. Many of the larger crystals contain inclusions of calcite and apatite, and needles of thomsonite coat grain boundaries and penetrate deeply into some of the crystals. Most of the sapphire crystals from the Beluga deposit exhibit spectacular zoning in cathodoluminescence that corresponds to the color zoning that includes iron and titanium concentrations. Fragments of yellow, colorless, and light blue sapphires were discovered in August, 2004 at another occurrence located 50

meters from the Beluga lens. This new deposit is called, Beluga South.

The Baffin Island sapphires are hosted by a calc-silicate lens in a marble unit of the metasedimentary Lake Harbour Group, near a major terrain boundary within the Paleoproterozoic Trans-Hudson Orogen. The area also hosts other gem varieties in this complex deformed, high-grade metamorphic rock, such as diopside, garnet, scapolite, tourmaline, apatite, zircon, moonstone, and lapis lazuli. The mineral rights to this sapphire-bearing area were acquired by True North Gems, Inc. in late 2003. So far, the largest deep blue sapphire faceted is a 0.66-carat trilliant, and the largest yellow sapphire is a 1.47-carat oval.

Glass-Filled Ruby Alert

Source: Colored Stone Magazine March/April 2005

According to several gem laboratories, rubies containing leaded glass to fill fractures are becoming more common. Fracture filling with leaded glass, known as the Yehuda treatment, was originally developed for diamonds. In January, 2005, the American Gem Trade Association Gemological Testing Center (AGTA-GTC) issued an alert statement that said the lab was observing an increasing number of rubies fracture-filled with leaded glass. Also, reports from ruby dealers indicate that significant parcels of these treated rubies are being sold in the US market. The Asian Institute of Gemological Sciences (AIGS) recently released a report that stated most of the glass-filled rubies originated from Madagascar. In the treatment for glass filling, rubies are first heated at low temperatures and then covered with the powders that will create the glass and heated again at similar temperatures. Because the rubies are heated at lower temperatures than what is used in traditional heat treatment, rutile mineral inclusions, often used to indicate whether or not corundum has been heated, will remain intact. Fracture filling is detected by examining fractures in transmitted light for the presence of flattened bubbles and, in dark-field illumination, the presence of blue-purple or orange

color flashes near any fractures. The AIGS found that the glass filled treatment was stable in ultrasonic cleaners and did not fade in sunlight. However, the glass fillings melted when exposed to a jeweler's torch and sustained damage when the stone was repolished or recut. The glass filling dissolved completely when exposed to hydrofluoric acid. When dipped in a jeweler's pickling solution, the glass fillings developed a visible etching along the surface-reaching fractures.

Emerald Prices Fall

Source: Colored Stone Magazine March/April 2005

Colombia is seeing its emerald prices fall amid a significant increase in production. Production of emeralds increased 66% in 2004, from 5.3 million carats in 2003 to 8.9 million carats in 2004. Five years ago, the price per carat for fine emerald ran as high as \$10,000. Now, it is between \$300 and \$400 per carat. Foreign prices for Colombian emerald are high relative to local prices, attributed in part to the Colombian tariff law. The law requires exporters to pay duties on outbound gems but does not verify the values declared by the exporters. Until recently, production at the major mines has been a closely guarded secret. However, the Unidad de Planeacion Minero Energetica, the federal mining agency, just completed an unprecedented survey of production at the nation's emerald mines. Sources relate that the mines at Muzo and Coscuez are both producing less emeralds than in past years. The Chivor mine, run by foreign investors in the 1990's, is now under the management of a regional mining authority and is not producing emeralds due to guerilla activities in the vicinity. Near Coscuez, emerald production at La Pita in Santa Rosa, Boyaca has increased. The reported decline in production at Muzo and Coscuez has caused the overall quality of Colombian emerald to drop in the last few years, because those mines have produced the best quality emeralds. The emeralds from La Pita, although plentiful, do not compare to the emeralds from Muzo and Coscuez. The decline in both price and quality continues to hurt Colombia's emerald industry.

Tanzanite Distribution Changes

Source: Professional Jeweler April 2005

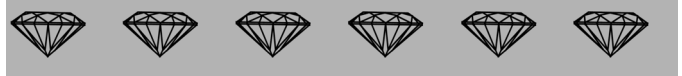
Michael Nunn, COE of TanzaniteOne, formerly Afgem, announced in Tucson that the company plans to structure their tanzanite distribution much like DeBeers does for diamonds. TanzaniteOne will invite six clients six times yearly to buy and distribute tanzanite to wholesalers, manufacturers, and jewelers worldwide. TanzaniteOne controls Block C of the tanzanite mines in Merelani, Tanzania, the only known source for tanzanite. TanzaniteOne wants to maintain a consistent supply of tanzanite and continue to offer high quality gems. The company hopes that this goal, along with an aggressive marketing plan, will establish tanzanite as the fine and rare gem that it is, marked at prices between diamonds and sapphires. TanzaniteOne is now traded on the London Stock Exchange. And, the TanzaniteFoundation (tm) will promote and support the trade through its brand and mark, a microscopic inscription that will be found on each tanzanite. The foundation, funded in part by TanzaniteOne, will remain a separate entity, plans to provide benefits to cutting and polishing centers in Tanzania and South Africa. It also wants to establish itself as a member of compliance with the best business practices, environmental controls, and ethics.

Brazilian Quartz with Pink Adventurescence

Source: Professional Jeweler April 2005

A new deposit of clear quartz in Minas Gerais, Brazil contains some interesting inclusions that impart a lovely phenomenon. Microscopic inclusions of lepidocrosite flash a uniformly hot pink or fuchsia interference color when light strikes their surface at specific angles of reflection to a viewer's eye. This phenomenon is known as aventurescence, an optical effect due to the reflections of certain inclusions. Vista Gems showed this fuchsia aventurescence quartz at the AGTA Show in Tucson, but the company was not disclosing the exact location of the deposit. Examinations of the quartz revealed that the inclusions, besides lepidocrosite, were hexagonal green crystals of muscovite and bright red oxide inclusions of goethite. The goethite is much like a fern in appearance and is scattered at odd angles

throughout the quartz. The exact cause of the pink sheen is not yet well understood. Natural quartz with tiny green fuchsite inclusions is known as aventurescent quartz and is also from Brazil.



Reminder:

If you have not paid the 2005 dues, please do so now. See page 16 for the membership application/renewal form.

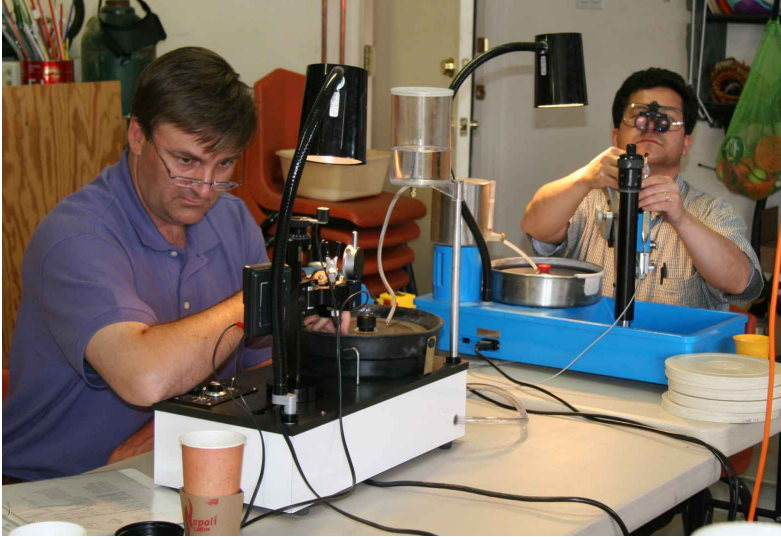


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If you would like to have your e-mail address added or removed, please contact Carsten Brandt.

Pictures from the April Workshop



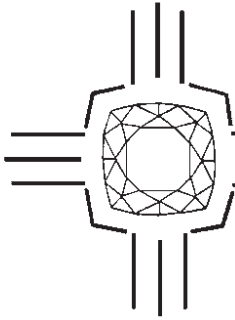
Kevin Schwebel and Jeff Jaramillo (above left).
Wesley Owen (above right)



Becky and Ernie Hawes



Marc Price



The New Mexico Facetors Guild

Membership application or renewal form

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