

*the*  
**New Mexico**

**faceter**

*July/August 2004*



**The Official Newsletter of the New Mexico Faceters Guild**

# NMFG

## Show and Tell



A fantastic citrine by Ernie Hawes in a new variation of the Old Mine cut.



A square cut quartz and pearshape cut aquamarine by Nancy Attaway.

Nancy also cut this beautiful tourmaline, as well as, the three amethysts on the cover page. The amethysts are from Ladron Peak, NM.



Elaine Weisman created the gorgeous necklace (left and background) made from many different materials.

### 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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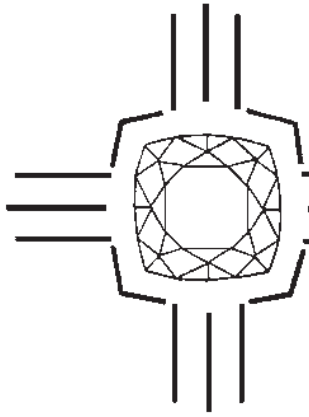
**Purpose of the Guild:** The purpose of the New Mexico Faceters Guild is to bring together persons who are interested in faceting or faceted stones. We promote the art and science of faceting and provide a means of education and improvement in faceting skills. Finally, we provide a means of communication 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 September 13, 2004.**



# The New Mexico Facetor

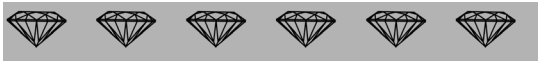
Volume 24, No. 4, July/August, 2004



NMFG President Dylan Houtman

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## New Mexico Faceters Guild Official Website

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

### The Prez Sez:

by Dylan Houtman

Hello there everyone,

I would like to put in an update on my Montringle cut. I have been cutting a variety of materials in this design, from quartz to spinel, and I have found the following angles have given me the best results regardless of the material: 60.86 degrees for the pavilion girdle facets, 53.26 degrees pavilion break facets, and 46.36 degrees for the pavilion mains. On the crown 36.97 degrees on the corner girdle facets, 36.3 degrees on the centre girdle facets, 30.73 degrees crown mains, 23.75 degrees for the corner break facets, and 17.68 degrees on the star facets. If you maintain an equal length on the girdle facets you can pretty much do whatever you want with the pavilion facets, like round the angles to the nearest degree, the crown is more fussy, you must maintain the tangent ratio between the angles for it to come out well. I have tried the original angles, the ones Ernie developed for corundum, and the ones listed above, for the crown, on a variety of pavilion angles with excellent results. If you choose to cut this design, I think you will enjoy both the experience and the results.

Facet more stones.

Dylan.





## Minutes from the NMFG Meeting

July 12, 2004

by *Nancy Attaway*

President **Dylan Houtman** called the meeting to order at 7:10pm and welcomed everyone to tonight's meeting. He then asked members and guests to introduce themselves to the group.

### Old Business:

**Ernie Hawes** reported that the workshop held on June 19 at the home of **Steve and Nancy Attaway** was a fun-filled and busy event. **Nancy Attaway** began by discussing several faceting diagrams from **Merrill O. Murphy** and **Dick Ochsner** and provided copies of these designs. She also provided copies of faceting tips and information related to faceting that cutters could include in their own information library.

Afterwards, a question and answer period led to a discussion on how a faceting design is created. **Ernie** reported on the faceting symposium last June in the Seattle area that was hosted by the Northwest Faceting Guild. Opal rough was brought for sale. **Steve Attaway** demonstrated mold making and polishing carved gemstones.

Local faceter **Scott Sucher** brought his many replicas of famous historical diamonds of the world.

After a delicious lunch, **Ernie Hawes**, **Dylan Houtman**, **Carsten Brandt**, and **Kevin Schwebel** all faceted their stones.

During the late afternoon, **Steve and Nancy Attaway** cast several flasks of gold jewelry in the lost wax casting method. This inspired another discussion on casting platinum.

### New Business:

Many compliments were given to Newsletter Editor **Carsten Brandt** for a fine May/June 2004 issue of the New Mexico Faceter. **Margaret Brandt**

arranged the beautiful cover design, and **Carsten** had included many great color photos.

**Ernie Hawes** and **Nancy Attaway** announced that the next Guild workshop is scheduled on August 21 at the home of **Steve and Nancy Attaway** in the East Mountains. It will begin at 9:00am and run until 4:00pm.

**Scott Wilson**, who was absent from tonight's meeting due to out-of-state family commitments, had asked President **Dylan Houtman** to announce the Albuquerque Gem and Mineral Club's sponsored field trip to Rabb Canyon. The trip is scheduled for Sunday, August 29, 2004. The Rabb Canyon moonstone area is located on the west slope of the Black Range, west of Hillsboro. Folks planning to attend should consider camping Saturday night at the Iron Creek Campground so they can meet at the site at 7:30am. This moonstone locality was lost for quite some time and was re-discovered by **Merrill O. Murphy** some years ago. It has produced some absolutely spectacular shimmering blue moonstones, of which many were facet grade. It can be difficult to remove the moonstones from the host rock, but the stones can also be found in the soil and gravels of the area's drainages. Folks interested in attending this field trip should contact a member of the AGMC, like **Paul Hlava**, attend the next AGMC meeting, and join the Club to be covered under their insurance policy. The AGMC sponsors many great collecting trips throughout the year.

### Refreshments:

**Marc and Elaine Price**, **Steve and Linda Vayna**, and **Nancy Attaway** brought home-baked goodies to be served during the meeting break, along with crackers and assorted cheeses, gourmet coffee, and soft drinks. Thank you all very much. **Carsten** and **Margaret Brandt**, along with **Nancy Attaway**, will bring refreshments to the meeting in September.

## Show and Tell:

**Dylan Houtman** displayed 48 gemstones that he faceted over the last four months, a wonderful array of many different gemstone types. He cut eight Uruguayan amethysts; eight lavender spinels; six spessartite garnets; one large oval clear danburite; one large oval pink danburite; one large emerald cut tourmaline; one round red garnet and one square red garnet; three citrines from Madagascar; two zircons; six tourmalines in pink, blue, and green; two small benitoites; four synthetic corundums; one large iolite; one leucite, and two herderites. WOW! How awesome!

Dylan has also a great new faceting design for a triangles called the “Montringle” cut, and he had faceted several of these stones in his new triangular design. Ernie Hawes and Nancy Attaway plan to help Dylan submit this design to Lapidary Journal for publication.

**Carsten Brandt** displayed a beautiful golden tourmaline that he faceted in a truncated marquise cut. He polished this tourmaline gem of the unusual gold color on an alumina lap.

**Ernie Hawes** displayed a lovely citrine that he faceted in his new variation of the Old Mine cut. The gem measured 12.2 x 12.2mm and weighed 7.41 carats. Ernie used new angles that he derived from optimizing software programs for gemstone cutting and arrangement.

**Elaine Weisman** displayed one of her unique necklaces she renders by incorporating several different jewelry making techniques. This particular necklace showed a peyote-stitched beadwork intermixed with lampworked glass beads, amethyst beads, and sterling silver beads. She also showed a hand-made sterling silver ring set with a round amethyst. Elaine hand-engraved the ring's shank.

**Bill Swantner** presented a tray of fifteen stones that were all diamond simulants of many types. He purchased this tray of gems at the last Tucson Show. Bill is interested in manufactured gemstones of all

types and collects as many as he can. The tray of stones included rutile, synthetic moissanite, silicon carbide, YAG, GGG, synthetic spinel, synthetic corundum, cubic zirconia, strontium titanite, and several others. Bill also showed two loupes for looking at gemstones. Bill's professional background involves optics, and he took apart the two loupes to better study them. The Russian-made loupe was a well-made triplet, but the other loupe was inferior in quality and had only a single piece of glass inside it. He recommended faceters to purchase the Russian-made gem loupes.

**Nancy Attaway** displayed six stones that she recently faceted. Three were amethysts from the Ladron Peak locality in New Mexico, an 11mm flasher cut (twelve-sided) round, a 13 x 8.5mm “antique” oval, and a 13.5 x 11 shield. She showed a 14 x 14mm square brilliant clear quartz from Petaca, New Mexico. These four gems will be sent to the mineral museum in Socorro at the New Mexico Institute of Mining and Technology to be included in the “Gemstones of New Mexico” exhibit. The three amethysts are currently the largest known faceted examples of amethysts from the Ladron Peak locale. Nancy also faceted a 20 x 15.5mm pearshape light-colored aquamarine that contained many fine needle inclusions and a smaller square barion ametrine. The “Antique Oval” and the shield cut, “Shield 2004”, are two new faceting designs that will appear in the July/August 2004 issue of the New Mexico Facetor.



Spessartite garnets by Dylan Houtman



## Program Speaker

by Nancy Attaway

Master jeweler and wax carver, **Bob Hazeltine** addressed the Guild on Casting jewelry and jewelry design. Bob Hazeltine was once head of the Jewelry Making Department at the Gemological Institute of America and now teaches classes on different jewelry techniques in both Albuquerque and Santa Fe. He focuses upon casting, wax carving, enameling, soldering and fabrication, stone setting methods, repousse, engraving, and mold making. He works with beginning jewelers and with jewelers who have advanced skill levels. Tonight, Bob Hazeltine discussed lost wax casting and he showed many slides to illustrate the steps involved in the process.

Bob's first slides showed the wax preparation required that begins the process of lost wax casting. A wax representation of the jewelry to be made is attached to a channel of wax that is attached to a rubber sprue base with sticky wax. Many of these wax models can be purchased at jewelry supply houses, but Bob stressed the importance of carving unique wax models yourself, to make one of a kind pieces of jewelry. Bob said that it was important to have the sprue bases and the flasks cleaned of old casting investment residues left from previous casting. He said that several wax patterns could also be attached to a wax stem that is attached to the sprue base. This allows more than one item of jewelry to be cast at the same time. The larger jewelry manufacturing companies, like Tripps' in Socorro, cast many of the same kind of wax patterns, like a jewelry part or a ring. This is done in multiples attached to the sprue base to make a tree with branches that hold the wax patterns. Bob remarked how very important it was to have smooth wax joints between the sprue base and the wax model. Smooth joints provide unimpeded flow channels for the molten metal to fully convert the wax models into metal when cooled. Bob further explained that any obstructions, like investment inclusions or broken channels, would result in incomplete castings, porous

castings, or badly formed castings. Sometimes, these can be repaired with a lot of soldering time, but often these castings are a complete loss. Bob said that each wax is weighed beforehand to ascertain the amount of precious metal required for casting, taking into account the metal needed for the sprue channels and the sprue button.

Bob said that a de-bubblelizer or a wetting agent was applied to the waxes before casting. Then, the sprue with the waxes fully prepared could be placed inside the steel flasks. Bob recommended that a 1/4 inch space be maintained between the inside of the flask and the edge of the wax models to prevent any part of the waxes touching the inside of the flask. He said that when the liquid investment is poured into the flask, it must completely fill the flask all around and to the top. The investment is a special powder that is mixed with water. Bob advised wearing a face mask to prevent breathing the powder, because the powder contains crystalline silica. Both powder and water are precisely measured according to the size of the flask and the amount of flasks to be cast. Powder and water are combined together in a mixing bowl and mixed with electric beaters. Mixing time is limited by minutes before the investment begins to harden. The liquid investment needs to be vacuumed on a vibrating table under a bell jar to eliminate most of the bubbles to ensure a smooth cast. Then, the liquid investment is poured into the flasks, and the flasks are placed under the bell jar on the vibrating table to be vacuumed. Afterwards, the flasks are left to harden for an hour before they are placed into an oven to begin the burn-out process.

Bob said to scrape away the excess investment that has hardened past the top of the flask. The silica tends to collect on the top, and scraping it away releases gas and permits the flask to breathe. The burn-out process begins with de-waxing or having the wax go from a solid state to a liquid state and a gaseous state. Bob said that it is important to have the area of the burn-out process properly vented to the outside. The flasks are placed into the de-waxing oven with the sprue button reservoirs downward. When the wax is all gone, it leaves a void in the

shape of the item to be cast into metal, hence the phrase “lost wax casting”. Bob said that soft wax requires temperatures of 275 °F to 300 °F to de-wax, and that hard wax requires temperatures of 375 °F to 400 °F to de-wax. Soft wax boils when heated too quickly. The de-waxing dumps much of the wax into a tray at the bottom of the oven. Bob said that it was important to clean anything involved with the casting process that will be used for the next casting operation to eliminate any contamination.

The next step in the burn-out process has the de-waxed flasks sitting in the casting oven at temperatures of 950 °F to 1,050 °F for several hours. Bob said to remember that the larger flasks used for many wax models contain more moisture than the smaller flasks used for individual wax models. This affects the burn-out time. Bob recommended heating the crucibles, made of a special high-temperature ceramic, in the casting oven to have them hot. This allows the cold metal, placed inside the crucible after the crucible is removed from the casting oven, to melt faster under the torch. Only one crucible is dedicated to a specific metal type. Hence, only one crucible is used exclusively for sterling silver. Only one crucible is used specifically for 14Kt. yellow gold. Only one crucible is earmarked for 14Kt. white gold. Only one crucible is allocated for 18Kt. yellow gold. Only one crucible is appropriated for 18Kt. white gold. The alloys used in these different precious metals vary, and you must avoid cross contamination of the metals. The United States has very strict laws for precious metals and for stamping them accordingly. A metal stamped 14Kt. or 18Kt. must contain a specific amount of pure gold; 58.5 % pure gold for 14Kt. and 75% pure gold for 18Kt; likewise, .999 silver for fine silver; and .925 silver for sterling silver.

Several methods of casting are available to the jeweler, including vacuum casting, sand casting, and steam casting, but Bob teaches centrifugal casting. Centrifugal casting is a contained unit with a rocker arm placed on a central pedestal that has a cradle, a place for the crucible and the flask to rest next to each other. The rocker arm is wound and tightened

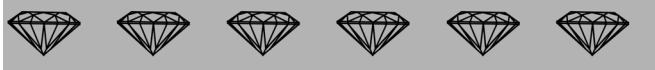
by turning it clockwise three times, and it is locked in place by a metal pin. When the torch has melted the metal completely in the crucible, the pin is released. This allows the rocker arm to spin very fast and throw the molten metal into the flask. A cast is really completed within the first one quarter turn of the first spin of the rocker arm. It is important to have the crucible as close to the flask as possible before you release the pin. This keeps the molten metal directed into the flask during the spin. Bob said that it is very important not to overheat and/or burn the metal. He said to wait five minutes before quenching the hot flask in a bucket of cold water to avoid thermal shock. Quenching the hot flask in cold water breaks apart the hard investment and leaves a cast item of jewelry that needs filing and polishing after you saw it from the sprue button. Bob said that a special electric urn for melting metal at specific temperatures can be used instead of a torch. The electro-melt is necessary for vacuum casting, where the metal must maintain a specific temperature during the pour. Vacuum casting works best at low altitudes and sometimes not at all at high altitudes. Many books on casting and wax preparation are available from several jewelry supply houses. Casting recommendations can also be found in the various tool catalogs published by some of the jewelry supply companies.

Bob described mold making as a way to create a library of wax patterns ready and available for use. These wax models can be used just as they are, or they can be incorporated into new ideas for jewelry design. Bob said that the first step in mold making involved using a mold frame to pack the rubber used for the mold. The mold is vulcanized at 320 degrees F, and cut with a scalpel. Baby powder can be used to powder the mold before wax is injected into it. Mold release spray also keeps the wax from sticking to the mold. Bob said that there is an art to properly cutting a mold to accommodate wax without cutting your fingers.

Bob ended his presentation by showing slides of some beautiful jewelry pieces that were cast by his students in his class. Bob discussed the merits of the



designs and the stone setting involved in rendering each piece. Bob announced his class schedule and provided literature about his jewelry making schools. The Guild thanks Bob Hazeltine for his professional insight into jewelry making and for explaining lost wax casting.

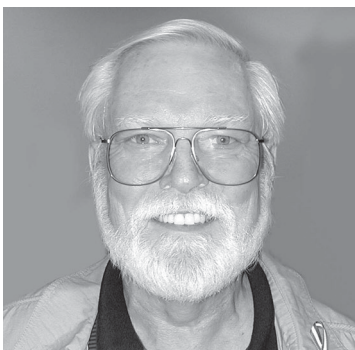


## FACET DESIGNER'S WORKSHOP

### Two New Designs by Nancy Attaway

By Ernie Hawes

Four years ago Nancy Attaway created *Shield 2000*, a very nice shield design. Nancy revisits that concept in this issue with a new shield design and a very nice variation. Nancy has named these designs *Shield 2004* and *Shield 2004a*. In presenting these designs, I am continuing using GemRayX to illustrate the ray tracing patterns. I wish I could show the computer animation, which gives a fairly good illustration of how these designs will look when cut. Both look quite good. Nancy's and Steve's comments on the basic design are below, but I want to say first that I find both patterns to be really attractive and believe they would make good designs for a pendant and a set of earrings. While the angles are specified for quartz, I believe they would also look good in Morganite or Aquamarine.



“My latest shield design, *Shield 2004*, evolved from a particular piece of amethyst unearthed from the Cascabel mine near Ladron Peak, located between Socorro and Albuquerque in New Mexico. Steve helped me to translate the design in GemCad, and he further refined the diagram for cutting ease. When first cutting the girdle facets, please know that six of the seven girdle facets are all cut at the same mast height; the exception to that is the long facet at 48. Likewise, six of the seven break facets of the

pavilion (the facets that correspond to the girdle facets) are also all cut at the same mast height; the exception to that is the long facet at 48. Regarding the arrangement of the pavilion facets, I wanted the culet facets to meet at a point rather than a keel.

The pavilion requires a lot of depth from a piece of faceting rough. The crown uses a series of three parallel step cuts. The step cut facets at 25 degrees may be eliminated if there is not enough room in the crown area. The angles of the step cuts may also be adjusted to accommodate a shallower crown. The five additional decorative facets on the crown are purely optional; they are to be placed above the corners and hover between the girdle and the table facet. *Shield 2004* is fairly easy to execute, and the result will pleasantly surprise you.

The *Shield 2004* and *Shield 2004a* can also be cut from the girdle down. In most cases, cutting such a shield design from the girdle down would be very difficult and would require precise measurements of the facet widths. However, one aspect of this design that may not be apparent is that all of the 90 degree facets except for the 48 index facet are cut to the same mast height. This means that the 53 degree facets can also be cut from the same mast height and should form a temporary meet point. After the 53 degree facets are cut, the 64 degree facet at index 48 can be used to locate the 48 index facet at 90 degrees. From here, geometry should be set and the mains should fall into place with a nice meet point achieved at the culet by vertical cheating.

I guess it depends on how your rough is shaped as to the order of cutting that would work best. If you think you have lots of depth and want to maximize the length and width dimensions, then I would suggest cutting from the girdle down.

When cutting version *2004a*, I would suggest cutting *2004*, then adding the extra facets. Even if you are cutting from the culet up, you will not lose much depth by cutting *2004* first.”





## Guild Workshop

by Nancy Attaway

**Steve** and **Nancy Attaway** hosted a Guild workshop at their home in the East Mountains on August 21. Many people attended this busy event. Steve Attaway slaved over hot coals with three of his Dutch ovens and cooked a fabulous lunch for folks attending the workshop.

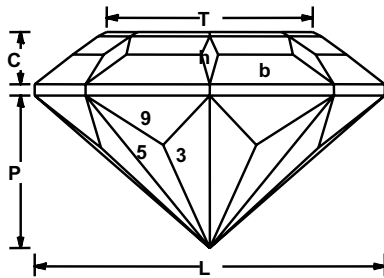
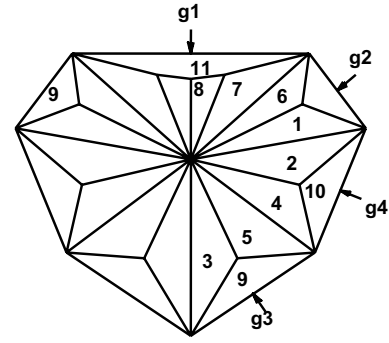
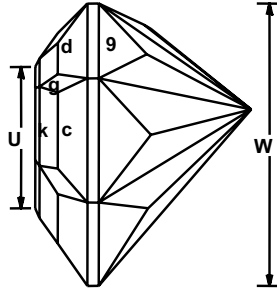
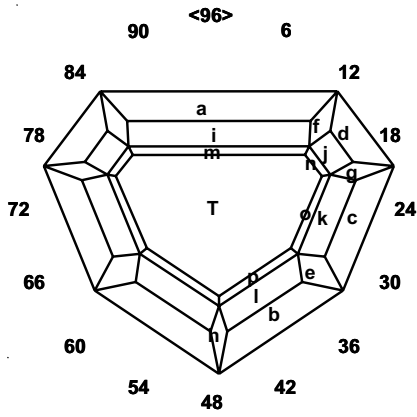
**Ernie Hawes** began the morning's session by discussing a hand-out sheet of recommended cutting angles by various authorities selected for different gem materials. He also handed out a sheet of his recommended faceting angles for cutting the Flasher Cut, a twelve sided round. Ernie then showed his new **XSIII** faceting head which he had installed on his Facetron base. This all stainless steel unit is custom made by the well known faceting innovator, **Jon "Gearloose" Rolfe**. Ernie also demonstrated his **Beale/Wooley Depth of Cut Indicator**, which is simply a small multimeter connected between the electrically isolated hard stop and a screw attached to the faceting head. This inexpensive device allows very accurate determination of the correct depth of each facet. Several people faceted part of the morning before lunch was served.

In three separate Dutch ovens, **Steve** cooked a large pork roast, **Nancy's** scalloped potatoes with green chile, and baked beans. **Scott Wilson** brought his Dutch oven and cooked a peach cobbler. At one point, the Dutch ovens were stacked on top of each other and covered with hot coals on the rock patio. Ernie Hawes' wife, **Becky**, had baked an apple cake, **Nancy** baked a lemon cake and a chocolate cake. **Nancy** made gravy for the pork roast and served coffee and iced tea. Folks who were intently faceting during the late morning had a hard time breaking for lunch, but they were quite surprised with what was served. Nearly everything was eaten, and the faceting resumed for the afternoon.

**Ernie Hawes** worked on a large amethyst with his new **XSIII**. **Carsten Brandt** completed a lovely small square danburite with his Ultra Tech. **Phil Callow** learned the rudiments of the Flasher Cut from **Nancy Attaway** with a large piece of a new synthetic material, called cristinite, on his Facetron. **Jeff Jamarillo** finished a small, light colored aquamarine, and then he wowed us with how quickly he cut the facets of the Portuguese Cut (round) on a large citrine with his Facette machine. **Elaine Weisman** worked on a piece of citrine cutting the Apollo Cut (triangle) on her Graves machine. Diamond cutter, **Phil Rudd** assisted her, since he was most familiar with her machine. Phil Rudd showed us some of the diamond crystals that he purchased when he traveled to Venezuela, and he had cut a few of the diamonds and brought them, too. **Nancy Attaway** showed new member **Amanda** how to cut her first stone, a Flasher Cut round, with a Facetron. Amanda, who learned faceting quickly, went from rough crystal to completing the polish on the pavilion of a citrine. **Dylan Houtman** also provided help for folks faceting.

**Steve Attaway** showed **Scott Wilson** how to use his cabbing equipment to fashion and polish a cabochon from a nice piece of lepidolite that Scott had collected from the Harding mine, located near Dixon, New Mexico about twenty miles south of Taos. **Steve Attaway** also showed **Elaine Weisman** how fast and efficiently his new All-Set Tools were at cutting the seats of cast heads for setting faceted gemstones.

This Guild workshop was a great success, and lots of fun was had by all. The next Guild workshop will be scheduled for sometime in October.



## Shield 2004

By Nancy Attaway

Angles for R.I. = 1.540

52 + 7 girdles = 59 facets

1-fold, mirror-image symmetry

96 index

L/W = 1.244 T/W = 0.726 U/W = 0.502

P/W = 0.544 C/W = 0.183

Vol./W<sup>3</sup> = 0.310



Random

COS = 44.9 %

ISO = 57.5 %

Dispersion = 4.2 %

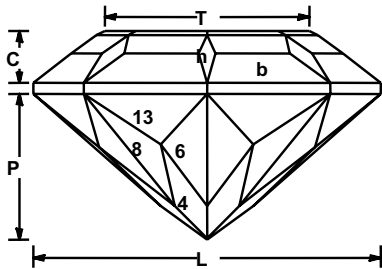
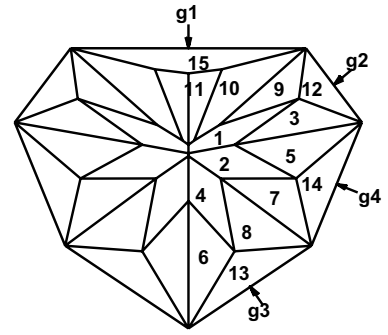
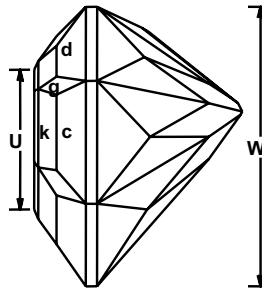
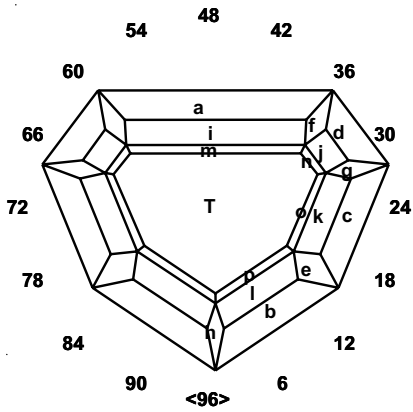
Scintillation = 35.1 %

### PAVILION

1	40.84°	20-76
2	42.13°	26-70
3	43.43°	42-54
4	44.78°	34-62
5	45.07°	36-60
6	45.43°	08-88
7	50.29°	03-93
8	51.24°	01-95
9	53.00°	14-82
9	53.00°	39-57
10	53.00°	30-66
11	64.31°	96
g1	90.00°	96
g2	90.00°	14-82
g3	90.00°	39-57
g4	90.00°	30-66

### CROWN

a	45.00°	96
b	45.00°	39-57
c	45.00°	30-66
d	45.00°	14-82
e	39.45°	35-61
f	37.63°	07-89
g	36.66°	22-74
h	35.55°	48
i	35.00°	96
j	35.00°	14-82
k	35.00°	30-66
l	35.00°	39-57
m	25.00°	96
n	25.00°	14-82
o	25.00°	30-66
p	25.00°	39-57
T	0.00°	Table



## Shield 2004a By Nancy Attaway

Angles for R.I. = 1.540

58 + 7 girdles = 65 facets

1-fold, mirror-image symmetry

96 index

$L/W = 1.244$   $T/W = 0.726$   $U/W = 0.502$

$P/W = 0.520$   $C/W = 0.183$

$Vol./W^3 = 0.309$



Random



COS = 46.8 %



ISO = 59.4 %



Dispersion = 4.7 %

Scintillation = 40.1 %

### PAVILION

1	38.89°	34-62
2	40.40°	18-78
3	40.84°	28-68
4	42.00°	09-87
5	42.13°	22-74
6	43.43°	06-90
7	44.78°	14-82
8	45.07°	12-84
9	45.43°	40-56
10	50.29°	45-51
11	51.24°	47-49
12	53.00°	34-62
13	53.00°	09-87
14	53.00°	18-78
15	64.31°	48
g1	90.00°	48
g2	90.00°	34-62
g3	90.00°	09-87
g4	90.00°	18-78

### CROWN

a	45.00°	48
b	45.00°	09-87
c	45.00°	18-78
d	45.00°	34-62
e	39.45°	13-83
f	37.63°	41-55
g	36.66°	26-70
h	35.55°	96
i	35.00°	48
j	35.00°	34-62
k	35.00°	18-78
l	35.00°	09-87
m	25.00°	48
n	25.00°	34-62
o	25.00°	18-78
p	25.00°	09-87
T	0.00°	Table





## In the News

### 182-Carat Diamond Found

*Source: The Albuquerque Journal July 20, 2004*

Guinea state radio announced that a 25-year-old diamond miner unearthed a 182-carat rough diamond from the West African forests when his shovel struck the stone at a dig in southeast Guinea. A top official with the Aredor mining company, Guinea's largest diamond operation, said that the rough diamond, which measured 4 inches by 1.5 inches, was worth millions of dollars.

### More on Myanmar Spinel

*Source: Colored Stone July/August 2004*

Spinel from the Namya stone region, located about 200 miles northwest of Mogok in Myanmar's Kachin State, has been yielding some fine quality red spinel in large sizes. The interest in red spinels has increased with the general decline of ruby production. Besides spinel, the mining area also produces ruby and sapphire that do not require heat treatment. The mines around Namya tend to be small operations. Mining is mostly done in pits no more than 30 feet deep.

### Is Opal Becoming Scarce?

*Source: Colored Stone July/August 2004*

The new opal deposit discovered in Queensland last year marked the first new opal field Australia has seen in a decade, the result of an agreement between native tribes, opal miners, and the Australian government. Under a new native title law, native tribes can now claim rights to any land they had traditionally occupied, or to which they had been connected. This new agreement has easily enabled miners to obtain exploration and mining rights to land claimed by native tribes and has opened vast tracks of new territory for opal mining. Digging commenced during the second half of 2003 under the new law. However, the opal industry continues its decline. Production, in general, is down 70 percent from 10 years ago. South Australia's Coober Pedy, the source of white opal, has been producing less

opal and lower quality opal more than before. Black opal production in Lightning Ridge is also down. Lightning Ridge has been nearly the only source of black opal for over 100 years. That source is now drying up, and no new black opal deposits are yet known. The decline in opal mining compelled miners to leave the remote areas to look for work elsewhere. Many retail shops have closed or are now selling other goods. Nearly all of the world's black opal and boulder opal, along with about 95 percent of the lighter opal, come from Australia, and the world may well experience a significant decrease in the opal supply. Opal prices have increased but not in proportion to the shrinking supply. Opals are not tied as closely to supply and demand as are many other gems but are rather evaluated by the beauty and fineness of each stone. Also, opal supply is not as tightly controlled as certain other gems are. Ten years ago, Japan purchased 70 percent of the opal. Lately, sales in the US have increased, while Japan's economy has experienced a recession. Most opal mines are located along the shores of what had been the shallow Eromanga Sea about 110 million years ago. This ancient lake covered most of the interior of Australia, including parts of Queensland, New South Wales, South Australia, and the Northern territories. Places to explore for opal still remain, and an increase in the demand for opal will inspire miners to search in these areas for new deposits.

### Greenland Rubies

*Source: Colored Stone July/August 2004*

Canadian mineral exploration company True North Gems, Inc. has acquired the option to a new property, the Fiskenaasset ruby district of Greenland. Ruby was first discovered in Fiskenaasset in the mid-1960's. The area has seen intermittent exploration over the years, although mining operation logistics in Greenland had previously been considered too expensive for commercial mining. Exploration by prospectors has unearthed specimen-grade ruby and some rarer cabochon-grade gem material. The rubies from Fiskenaasset are found in an amphibole-rich rock, are reported to contain unusually high chromium content, and fluoresce strongly under

ultraviolet light. The color ranges from pink to pigeon's blood red. True North is also exploring for emeralds in Regal Ridge, Yukon Territory. The company has options on the Ghost Lake emerald property in Ontario, Canada and the Kimmirut sapphire property on Baffin Island, Canada.

### **Fake Inclusions in Quartz**

*Source: GIA on the web 8/14/04*

Quartz is often valued for its interesting inclusions, and some quartz specimens that contain distinctive inclusions command high prices. This demand, however, has inspired the manufacture of fakes and imitations. Many of the quartz specimens with unusual inclusions originate from Brazil. Recently, a buyer of mineral specimens traveled to Brazil and found a local dealer selling quartz specimens with unusual coral branch inclusions. All specimens were cut en cabochon and contained naturally occurring inclusions of mica or chlorite. The buyer purchased several of these specimens. Further investigation revealed that the coral inclusions had been faked. The coral branches had been drilled into the cabochons and filled with a mineral powder mixed with glue via a syringe. The filled holes were then covered with small pieces of feldspar and quartz mixed with glue and sealed with a larger piece of feldspar.

The Summer 2004 issue of *Gems and Gemology* features three excellent articles. The first one concerns gem treatment disclosure and US law, where the obligation to fully disclose all gem treatments has changed from an ethical responsibility to a legal one. The US Federal Trade Commission Guides now require disclosure of any treatment that affects a gem's value, and that vendors who fail to disclose known treatments can subject those vendors to civil liability for fraud by nondisclosure. The second article reports in depth on Chatham's synthetic colored diamonds, now made in yellow, blue, green, and pink. The third article describes in great detail infrared absorption band in natural and synthetic amethyst, and it explains how this feature can determine natural amethyst from synthetic when

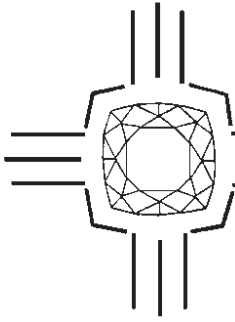
used with IR spectra, internal growth structures, and inclusions.



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## The New Mexico Facetors Guild

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