

# The Opal Express

American Opal Society  
P.O. Box 4875  
Garden Grove, CA 92842-4875



**Volume #35 Issue #7  
July 2002**

- In This Issue:**
- Cutting Boulder Opal
  - Identifying Meteorites
  - USPS Irradiation: Its Effect On Gems

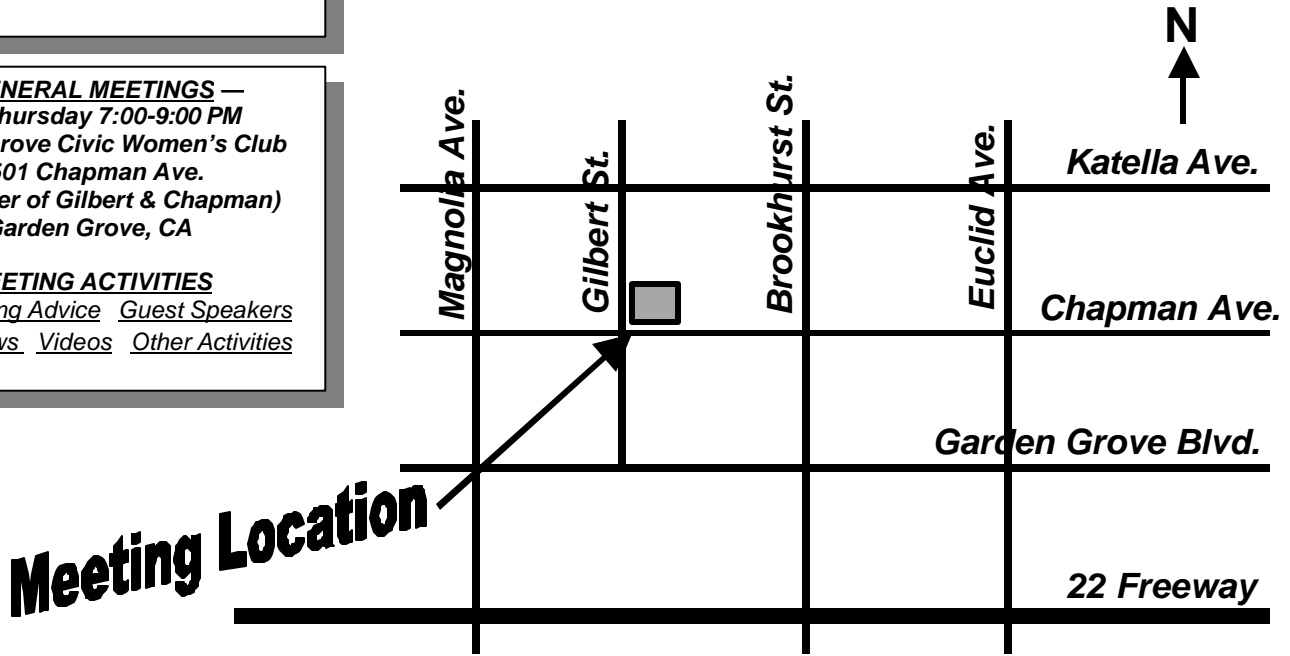
**Board Meeting-Monday, July 8**  
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**General Meeting  
Thursday, July 12**  
**Speaker: To Be Announced**

— **GENERAL MEETINGS** —  
**2nd Thursday 7:00-9:00 PM**  
**Garden Grove Civic Women's Club**  
**9501 Chapman Ave.**  
**(NE corner of Gilbert & Chapman)**  
**Garden Grove, CA**

**MEETING ACTIVITIES**  
Opal Cutting Advice Guest Speakers  
Slide Shows Videos Other Activities

TO:



**The American Opal Society**  
<http://opalsociety.org>

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# American Opal Society Membership Renewal

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**NAME BADGE ORDER FORM:**  
PLEASE PRINT NAME AS YOU WISH IT TO APPEAR ON YOUR BADGE using up to two (2) lines of text for your name, nickname, or name of your opal related business.

**MEMBERSHIP ROSTER & DEALERS LIST:** The AOS publishes a membership directory once per year in its Newsletter, the *Opal Express*. Please check what personal information that you want listed for other members:

- Name   
 Address   
 Phone   
 E-mail   
 Website  
 Include my name & address on a list provided to the Dealers selling at our Annual Opal & Gem Show.

If you checked any box above, please sign here: \_\_\_\_\_ Date \_\_\_\_\_

Without your signature here you will not be included in the member info list or included in the dealer roster.

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**Editor-Jim Pisani**  
Please address all inquiries and exchange newsletters to:

**The Opal Express C/O  
Jim Pisani  
P.O. Box 4875  
Garden Grove, CA 92842-4875**

**Email: webmaster@opalsociety.org**

Article Deadline is the 20<sup>th</sup> of the month prior to each issue

**Are Your Dues Due Now?**

**PLEASE CHECK YOUR ADDRESS LABEL.** If your label shows the current month/year your dues are DUE NOW. If the date is older, your dues are overdue.

**A Renewal Grace Period** of two months will be provided. If your dues are due now you will receive two additional issues of the newsletter. Please note, however, that as the system is now set up, if your renewal is not received you will be AUTOMATICALLY dropped from membership thereafter. It is your responsibility to assure your dues are current.

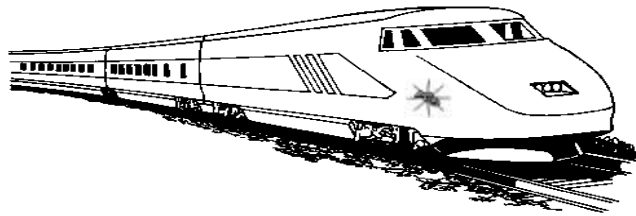
Thank you,  
The Editor

# The Opal Express

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Volume 35, Issue 5



## PRESIDENT'S MESSAGE

*Mike Kowalsky*

Hi Everybody,

It's a bad fire season in the U.S. this year. Last year I was writing e-mails to friends in the Sydney area to see how they were faring in the forest fires there. Here in the US we are having similar weather a season later. I heard from a friend in Tucson that there were fires in the Huachuca area. I had been there in February this year visiting the Arizona Blue Opal Mine rock and gem store. I immediately sent a message to Cheri Saunders, whom I had met in February, to see how they were doing. I received back responses that the fires did not reach them and provided pictures of the three fires that had occurred there recently. However, Ms. Saunders said that the National Forest was closed and therefore they couldn't get to the mining area. I also have a friend living south of Denver, CO. We were able to contact him and received response that they were OK and also received pictures of the view of the fires from their place. Other fires haven't had the headlines and the six or more fires in California are not making headlines as of this time. The fire season normally doesn't start until late August and this year it started in May.

Some of us may try to make the memorial service for Dr. John Sinkankas at the GIA Richard T. Liddicoat Library and Information Center in Carlsbad. The memorial service is at the Gemological Institute at Carlsbad on the afternoon of the 28<sup>th</sup> of June. In the library are housed his gemology books. In lieu of flowers donations should be made directly to the John Sinkankas Library.

I recently learned about a gem display at the GIA facilities in Carlsbad. I have also been told that the display contains some outstanding opals. The display is part of the GIA museum located on the second floor. Additional information is available at their website: <http://www.gia.edu/>. I am planned to go to visit the museum and will contact local members to try to do a group visit.

I am also planning to go to the Culver City Gem and Mineral Show the 29<sup>th</sup> and the 30<sup>th</sup> of June. I expect to see many friends at their Annual Show. Maybe see you there.

I will be on holiday for the next general meeting. I will be in Canada and will try to noodle in some of the rock shops there.

See you in August.

+++++

### **MARK YOUR CALENDAR!!!**

*For The American Opal Society's  
35th Annual*

### **ANNUAL OPAL & GEM SHOW**

***Largest Opal show in USA!***

**Sat. & Sun., November 2 & 3,  
2002**

**Saturday 10AM - 6PM**

**Sunday 10AM - 5PM**

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**Close to DISNEYLAND**

**One block South of Katella Ave.**

**On Harbor Blvd.**

### ***Workshop Notice***

***Construction work at Walker Junior High is still preventing the Opal Society Workshop from opening. The construction has progressed but we still do not know when it will open.***

***Please call Stan McCall at Gems & Opals  
(714) 827-5680 to find out the status.***

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**MORE ARCHIVED NEWSLETTERS ONLINE  
HOWEVER...**

I've mentioned in the past newsletter that I have been making an effort to put more newsletters in our archive on the web. I have made conversions to HTML (that's the format for websites) from the various past formats we have had from scanning in old newsletters to converting them from MS Word, MS Publisher, and Formtool.

However, I haven't published these newsletters, which range from 1994 to the present, because I noticed that a number of them had personal information of members (names, addresses, telephone numbers, etc.). We will not publish this information on the Internet. This is because even though the website is password protected, it is not secure and can easily be bypassed. We want to protect our members' privacy. I am taking the time to review and edit each issue (about 70 issues) for personal information before I publish. This will take some time, but I hope to have it done fairly soon.

To view the existing archives, go to this website:  
[http://www.opalsociety.org/aos\\_member\\_login.htm](http://www.opalsociety.org/aos_member_login.htm).  
Type the password "opalsrus" (small letters) in the space to the right of the label "Password". This will take you to the archives.

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**JULY GEM SHOWS**

**11-14, NYSSA, OR - 37TH ANNUAL THUNDEREGG DAYS - ROCK & GEM SHOW.** School Grounds. Chamber of Commerce Office, 541-372-3091, [nyssacofc@fmtc.com](mailto:nyssacofc@fmtc.com).

**12-14, PLACERVILLE, CA - CALIFORNIA FEDERATION OF MINERALOGICAL SOCIETIES.** 63rd Annual Gem Show & Convention. Hosted by El Dorado County Mineral & Gem Society. El Dorado County Fairgrounds, 100 Placerville Dr. 12th & 13th, 10-5; 14th, 10-4. Jack Williams, 530-622-3038.

[gemshow@hotmail.com](mailto:gemshow@hotmail.com), website: [www.CFMSgemshow2002.org](http://www.CFMSgemshow2002.org).

**12-14, PASADENA, CA - INTERNATIONAL GEMS, BEADS, & JEWELRY SHOW.** International Gem & Jewelry Show, Inc. Pasadena Convention Center, 300 E. Green St. 12th, noon-7; 13th, 10-6; 14th, 11-5. Charlie Ross, 301-294-1640, ext. 817, [charlie@intergem.net](mailto:charlie@intergem.net), [www.intergem.net](http://www.intergem.net).

**12-14, Durango, CO--Four Corners Gem & Mineral Club.** 50th Annual Show. LaPlata Fairgrounds Exhibit Hall. 12th, noon-6; 13th, 10-6; 14th, 10-5. Marie Wester, 970-247-9648, [jmwester@fone.net](mailto:jmwester@fone.net); or Tricia Jacobson, 970-385-6877, [tobshears@frontier.net](mailto:tobshears@frontier.net).


**12-14--SALT LAKE CITY, UTAH:** Show; Gem Faire; Utah State Fairpark, 155 N 1000 W; Fri. 12-7, Sat. 10-7, Sun. 10-5; weekend pass \$5; contact Allen Van Volkinburgh, (760) 747-9215; Web site: [www.gemfaire.com](http://www.gemfaire.com).

**19-21--BOONE, NORTH CAROLINA:** 8th annual show; Treasures of the Earth Gem & Jewelry Shows; Boone National Guard Armory, 274 Hunting Hills Ln.; Fri. 10-6, Sat. 10-6, Sun. 11-5; jewelry makers, goldsmiths, silversmiths, wire wrap, stone beads, stone setting, amber, opal, mineral and fossil dealers, hourly door prizes, grand prize; contact Van Wimmer, 5273 Bradshaw Rd., Salem, VA 24153, (540) 384-6047; e-mail: [vawimmer@rbnet.com](mailto:vawimmer@rbnet.com); Web site: [www.toteshows.com](http://www.toteshows.com).

**26-28--SAN RAFAEL, CALIFORNIA:** Show; Gem Faire; Marin Center, 10 Avenue of the Flags; Fri. 12-7, Sat. 10-7, Sun. 10-5; weekend pass \$5; contact Allen Van Volkinburgh, (760) 747-9215; Web site: [www.gemfaire.com](http://www.gemfaire.com).

**27-28--TENINO, WASHINGTON:** 7th annual show; Washington Agate & Mineral Society, in conjunction with Tenino Rock Cruisers; Parkside Elementary School, Stage St. (near downtown); Sat. 10-6, Sun. 10-5; free admission; dealers, demonstrations, displays, door prizes, spin-the-wheel, food; contact Daniel DeBoer, 5107 Brenner Rd. NW, Olympia, WA 98502, (360) 866-3940.

**18-21, PORT TOWNSEND, WA - VICTORIAN GEMS: "A STEP IN TIME."** Port Townsend Rock Club. Jefferson County



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Fairgrounds, 49th St. @ Landis St. 18th-20th, 10-6; 21st, 10-5. Bob Sahli, 360-732-4678, [sahli@olympus.net](mailto:sahli@olympus.net), [ckloostra@rosengrp.com](mailto:ckloostra@rosengrp.com), [www.rosengrp.com](http://www.rosengrp.com).

**19-21, FLAGSTAFF, AZ - AMERICAN GEM & MINERAL SHOW.** I-40 @ Butler Ave. 19th, 11-7; 20th, 10-7; 21st, 10-5. Val Latham, 928-526-5152, [godrocks@aol.com](mailto:godrocks@aol.com), [www.pywiack.com/fgms/agms.htm](http://www.pywiack.com/fgms/agms.htm).

**20-21, MENDOCINO, CA - ANNUAL SUMMER ARTS AND CRAFTS FAIR.** Mendocino Art Center, 45200 Little Lake St. 800-653-3328, [www.mendocinoartcenter.org](http://www.mendocinoartcenter.org).

**24-28, FRANKLIN, NC - 37TH ANNUAL MACON COUNTY GEMBOREE.** Franklin Chamber of Commerce/Franklin Gem & Mineral Society. Macon County Community Building, Rte. 441 S. 24th, 2-6; 25th-27th, 10-6; 28th, noon-5. 800-336-7829.

**\*25-28, FRANKLIN, NC - AKS GEM & JEWELRY SHOW PRODUCTIONS, INC.** Country Inn Town Motel, 277 E. Main St. (Hwy. 441 Bus.). 25th-27th, 10-6; 28th, 10-4. Kay Schabillon, 504-455-6101, [aksshow@att.net](mailto:aksshow@att.net), [www.aksqgemshows.com](http://www.aksqgemshows.com).

**\*25-28, FRANKLIN, NC - GEM & LAPIDARY WHOLESALERS.** Business to Business Gem Trade Show. Watauga Festival Center, 426 Watauga Rd. (Hwy. 441 N). 25th & 27th, 10-6; 28th, 10-3. 601-879-8832, [info@glwshows.com](mailto:info@glwshows.com), [www.glwshows.com](http://www.glwshows.com).

**26-28, SAN RAFAEL, CA--GEM FAIRE.** Marin Center, 10 Avenue of the Flags. 26th, noon-7; 27th, 10-7; 28th, 10-5. Allen Van Volkinburgh, 760-747-9215, [www.gemfaire.com](http://www.gemfaire.com).

**WANTED...  
OPAL & GEM ARTICLES!!!**

The American Opal Society is looking for a few good writers for our newsletter, the *Opal Express*. Members can submit articles for publication on a variety of topics, such as field trips, lapidary interest, jewelry making, gem & minerals, and of course, anything to do with OPAL!!! Please feel free to submit articles by mail at:

**The Opal Express C/O  
Jim Pisani  
P.O. Box 4875  
Garden Grove, CA 92842-4875**

Or e-mail at: [webmaster@opalsociety.org](mailto:webmaster@opalsociety.org)

*Article Deadline is the 20<sup>th</sup> of the month prior to each issue. The editor reserves the right to use or not use a submitted article and to edit it for publication.*

**USPS IRRADIATION: ITS EFFECT ON GEMS**

The Gemological Institute of America (GIA) announced the results of a preliminary study on the impact on certain gem materials of the irradiation process the U.S. Postal Service (USPS) is using to kill anthrax and other biological agents that might be contained in the U.S. mail. In most cases, the process produced dramatic changes in the color of the gem materials.

The testing was conducted with the cooperation of SureBeam, which makes the irradiation equipment the USPS is using. SureBeam is a subsidiary of Titan Corporation of San Diego. The equipment is a type of linear accelerator that creates a beam of high-energy electrons typically used to kill the microorganisms that can contaminate food.

Coincidentally, this is the same type of ionizing radiation that is often used intentionally to change the color of some gem materials. As a result, the colors of a number of gem materials, among them pearls, sapphire, quartz, kunzite and topaz, can be sharply altered by the irradiation method the USPS is using, the research showed. For example, the white cultured pearls turned gray, the pale blue sapphires turned deep orange, and the pink kunzites turned green. On the other hand, the diamonds in the study did not show any perceptible color change.

GIA undertook the research as part of its role of serving the gem and jewelry industry and protecting the public interest, according to the Institute's President, William E. Boyajian. "GIA strives to remain on top of issues that can affect the gem and jewelry industry and the public. When we became aware of the U.S. Postal Service's proposed 'sanitation' of mail using ionizing radiation, we immediately began investigating the potential impact of this process on gems shipped through the USPS."

Boyajian added, "The industry uses the U.S., Mail heavily to ship gems and jewelry nationwide, so the potential impact of irradiation on high volumes of mail is obviously a major concern, and we believed it was important to conduct this research."

Shane McClure, director of West Coast Identification Services for the GIA Gem Trade Laboratory, who led much of the research study, noted, "Our information is that the Postal Service is currently scanning only a small amount of mail using this process, and this has been limited to letters and other flat mail. Nonetheless, we think the results of our research can help the jewelry industry and the public avoid potentially negative effects

on their gem materials by choosing packaging that would be less likely to undergo irradiation."

McClure added, "The preliminary test results also showed that gold jewelry would not retain any residual radioactivity from the irradiation process. GIA plans to continue its research, and further results will be reported when available.

A detailed report of the actual GIA research, with before-and-after photos, can be seen at the GIA web site at: [www.gia.edu/gandg/special-issue112701.cfm](http://www.gia.edu/gandg/special-issue112701.cfm).

The following table, from the above referenced report shows the results of the testing done by GIA:

GEM MATERIAL	BEFORE	AFTER
diamond	near colorless	near colorless no change
diamond	gray	gray – no change
kunzite	pink	green
morganite	brownish or orangey-pink	yellow
cultured pearl, saltwater	white	gray
cultured pearl, freshwater	white	gray
quartz	colorless	brown
quartz	yellow	Yellowish-range
sapphire	light blue	Yellowish-orange
topaz	colorless	brown
tourmaline	near colorless	light pink
tourmaline	light pink	darker pink
zircon	colorless	pinkish
brown zircon	yellow	Yellowish-brown
zircon	green - greenish	Yellowish-brown

From "Diablo Diggins" May, 2002 Issue

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# TIPS FOR CUTTING BOULDER OPAL

By Tim And Barbara Thomas Of The House Of Tibera

*These lessons and tips were learned in Australia from the pros, the miners and cutters themselves.*

## **INTRODUCTION:**

### **THE KEY TO CUTTING BOULDER OPAL IS TO REMEMBER THAT IT IS A SEAM OPAL.**

When a boulder or rock under heat and pressure develops small fissures and these fissures fill with an amorphous silica gel (opal) and the result is a boulder with seam opal. Seam opal does not necessarily develop in layers. Some seam opal appears to radiate around the center of the boulder.

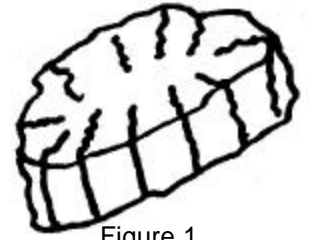


Figure 1

**THAT IT IS THIN BUT - BEAUTIFUL AND MUST BE EXAMINED CAREFULLY RELATIVE TO:**

**YIELD - YIELD - YIELD**

## **READ THIS WHOLE PAPER BEFORE BEGINNING ANY OF THE PROCESSES.**

Reading this whole article will give you an overview of the processes and a better understanding of the need to examine, evaluate, saw, split and polish each piece of boulder opal.

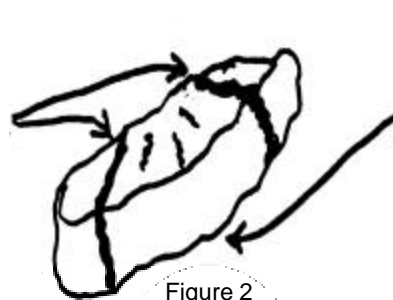
## **THE FIVE STEPS OF CUTTING BOULDER OPAL:**

Cutting and finishing boulder opal is similar to sculpting or carving opal.

- (1) Examine the boulder for opal seams that will be potential surface stones, splits, stones from split material or as a specimen.  
Develop a sawing plan.
- (2) Saw the boulder in order to maximize the yield.
- (3) Split the boulder opal and/or grind to shape.
- (4) Polish the shaped boulder opal in order to obtain a finished face.
- (5) Complete the back of the finished boulder opal stone.

## **STEP 1: EXAMINE THE BOULDER - DEVELOP A SAWING PLAN**

Evidence of a seam of opal in the boulder



Boulder composition sandstone, soft or hard or ironstone

Examine the piece of rough boulder looking at all sides. Is there evidence of opal seams? Any go all the way around the stone? Any crossing seams? Examine the piece in order to map out the number of saw cuts and the sequence of the cuts using a marker (biro, fib-pen) with a narrow point.

- If the piece is faced or has a surface area that you would like to see as a finished opal, mark the surface with a dotted line just outside the 'to be finished edge', mark the saw cut line for the back of the stone and mark any parts that need to be trimmed prior to preliminary grinding.

**OR**

- If no surface face is evident look for a seam close to the surface where the ironstone can be ground away to reveal opal or locate the most promising seam for a potential stone and mark it.

- If any of the seams run through the whole piece, a split becomes a viable option. With the marker using dotted lines mark all potential saw cuts that may reveal seams that run through the piece; Examine how the potential saw cuts may intersect or conflict with other saw cuts. Reevaluate and mark accordingly.
- Determine the sequence of cuts in order to maximize the yield as evidenced by.
  1. The best stone or stones.
  2. The most or the least stones.
  3. No stone - but - a specimen to be used creatively in a pen stand, business card holder, visual accent, display, etc.

## STEP 2: SAWING

BOULDER material is easy to saw using diamond blades. .003 to .006 are good thicknesses for cutting up the boulder. Use .012 for sawing the slit for splitting and for delicate trimming. The diamond blade will cut faster when there is lots of water and the rough material is slowly moved in and out along the blade eliminating the debris. Always place the material in the lower quadrant of the saw blade as this reduces chattering and grabbing by the blade.

1. Saw cuts should leave at least a 1/4" of ironstone or sandstone for the backing of any potential stone.
2. It is most important to map out the sequence of saw cuts.
3. AFTER EACH CUT - re-examine the stone to make sure the saw cut hasn't uncovered a pleasant or unpleasant surprise.

- If the boulder looks like this with sandstone or ironstone on both sides narrow seams of the opal, make narrow saw cuts until you reach the opal layers.

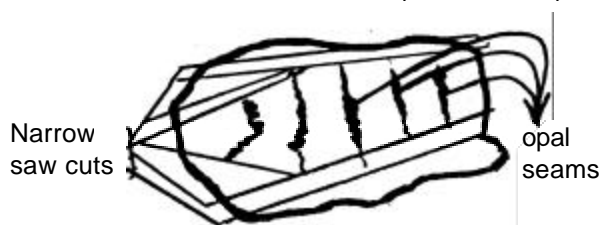


Figure 3

- A piece of boulder with crossing seams of opal, will best be cut for maximum yield as indicated in Figures 5-8. A stone cut with a window of opal from intersecting opal seams will result in a weak spot and eventually will break at the window (Figure 4).



Figure 4

- Make diagonal saw cuts (Figure 5) as indicated by the dotted lines. This should result in a minimum of four stones (Figure 6). Then grind to the fire seam and shape the back of the stone.



Figure 5



Figure 6

- The 4 resulting pieces from the above cuts might be able to be split for eight stones.



Figure 7



Figure 8

**NOTE:**

Sawing uses lots of water. If the water is circulating in a sump, empty it and the resulting debris often. OR, you could hook up a drain hose to an old paint bucket and empty that as needed.

**STEP 3: SPLITS - NOT ALL BOULDER OPAL WILL SPLIT CLEANLY**

When boulder opal is split the following outcomes are possible:

- Opal seam is damaged and the opal is not usable.
- Opal seam is damaged but some opal is useable - one or both sides may provide enough opal for a nice stone or a specimen piece.
- Opal seam does not go 360° around the whole stone therefore the material does not split cleanly, but instead cleaves or breaks in unexpected places - this may result in none or many stones to finish.
- Opal seam splits cleanly - two sides are not mirror images - finish the stones for maximum yield.
- Opal seam splits cleanly - two sides are mirror images - this is the optimum, what one looks for in every split.

**Most of the time splits work when:**

- The opal vein goes 360° around the stone.
- There is a natural crack in the opal seam and with a little help the split occurs there.
- Part of the opal seam is at least 3/32 thick.
- At least 1/4 inch of sandstone or ironstone is on either side of the opal seam.

**THE PROCESS**

**LOOK AT THE OPAL SEAM, with a .012 saw blade, make a cut, 1/8” deep at a crack or at a place in the seam where you will not or minimally destroy residual fire. Insert a putty knife in the saw cut, press and twist. The result should be some kind of split. The process is easy but fraught with uncertainty.**



Putty knife

Figure 9

The diagrams below may clarify cutting problems or challenges

(1) SPLIT - opal seam w/crack

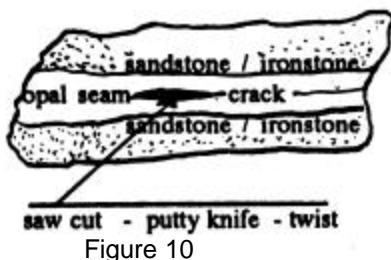


Figure 10

(2) SPLIT – clean opal seam

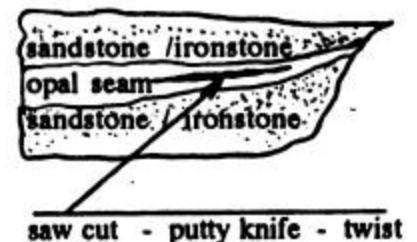


Figure 11

**STEP 4: SHAPING AND POLISHING THE STONE**

1. The faced piece can now be pre-polished and finished. Some cautions:
  - The opal may be very thin.
  - The faced piece may have a very rough surface.
  - Be very cautious about overheating the stone.



2. Shape and clean up the stone using wet 200 - 320 grit wheels. Grind off excess material.
3. For pre-polishing a stationary Foster handpiece (up to 20,000 rpm) is preferred. But a motor, Dremel, Foredom or Pfingst handpiece mounted so it is stationary will work as well. First step is to use 280 or 320 grit mesh sand paper mounted on a soft rubber backing and complete the cleanup process. It's best to have more than one mandrel ready to use because a rough face of opal may use 1-10 discs, depending upon the size and complexity of the opal. Use a dust collection system or a mask as this sanding process is done dry. Gently, gently, gently, touch the opal to the rotating disc for 1-2-3 seconds, or less, check the opal by rubbing your thumb or finger over the opal and then visually check for fire patterns, roughness and heat. In this manner remove rough edges of the opal and proceed with the sanding, pre-polishing and polishing. Follow the contours of the fire patterns. Look at the stone every 2-3 seconds!! When you sand or grind away fire it is gone forever!!!
4. Proceed to the next sanding step after you have wiped off the debris and 320-mesh material from the stone.
5. Using 400-mesh sandpaper on the soft rubber backings - go through the same process as described above in step 3. When satisfied that all the 400 scratches are one (use magnification to check this out) proceed to the 600 and 1200 meshes using the same process.
6. Final polish the opal on a leather buff using an optical cerium oxide and denatured alcohol slurry the consistency of whipped cream. Adding a drop of detergent, 5% sulfur and 5% micro fine graphite may improve the polish.

### **STEP 5: FINISHING THE BACK OF THE STONE**

1. After sawing the boulder, shape the sides and back of the stone using 200-320 grit silicon carbide or diamond wheels.
2. Finish the back and sides of the stone using 400, 600 then 800 mesh abrasive sheets or polishing paper but use chrome oxide on a leather buff instead of the cerium as it seems to do a better job on the sandstone or ironstone.

**NOTE:** You can make your own discs to mount on a mandrel. Buy sheets of abrasive paper that can be bought at Harbor Freight\*. Soft rubber discs may be punched out of rubber or vinyl pads purchased at Orchard Supply Hardware\*. Use appropriate glue like "lapidary disc cement" to adhere the discs to the soft rubber 1 inch discs.

\*We do not endorse any particular hardware store.

## **BOULDER OPAL - PRICE LIST**

### **DESCRIPTION AND EVALUATION OF BOULDER OPAL PIECES**

*LEAST VALUABLE > read from left to right > MOST VALUABLE*

#### **A. FIRE COLORS**

white —>blue—>blue-green—>green—>some red—>mixed colors with red predominate

#### **B. COLOR INTENSITY**

Spotty—>color variations and mixed—>color intense and solid

#### **C. PATTERN**

sheet —> pin—>grassy —> harlequin —> ribbon

**Faced pieces** - Ready to be sanded and polished for setting in inlay or jewelry.

Measures from 1/4 x 1/2 to 1 1/2 x 3 inches.

**Splits (pairs)** - Matched pairs either faced or polished.

Measures from 1/4 x 5/8 to 2 x 3 inches.

**Polished nieces** - Ready for mounting in jewelry, wire wrapped, inlay, etc.

Measures from 1/4x1/2 to 2x3 inches.

**Specimen or rough material** - measures from 1 x 2 inches to cantaloupe size.

### ***THE HOUSE of TIBARA - OPAL by TIBARA TIM AND BARBARA THOMAS***

*28 December, 1999*

*OPAL: YOUR PERSONAL RAINBOW*

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*Editor – thanks to members Tim and Barbara Thomas again for their excellent articles on all things opal.*

## HOW TO IDENTIFY A METEORITE

There are two major types of meteorites:

1. Iron meteorites, of which the Canyon Diablo meteorites are an example, are comprised of nearly 100 percent metals, generally about three times the weight of ordinary earth rocks of the same size. For this reason, meteorites are strikingly different from earth rocks.
2. Stony meteorites are about 75 to 90 percent silicate minerals, with 10 to 25 percent nickel-iron and iron sulfide. They usually weight 1 1/2 times as much as an earth rock of the same size. A few meteorites, called stony-irons, are about 50 percent iron and 50 percent silicates.

While meteorites vary in size from microscopic to several feet or more, most of those found are 2 inches to 2 feet across. Contrary to what might seem logical, they are seldom round in shape, but are generally very irregular or flattened cone shapes.

New arrivals generally have a black crust that weathers to brown; very old finds may have lost this crust. The surface is usually smooth, with some having flow lines, depressions and smooth pits, also called "thumbprints." Iron meteorites will usually show these thumbprints.

According to the Center for Meteorite Studies at Arizona State University, Tempe, the best single test for a suspected meteorite is to grind off a small corner on a carborundum wheel. The ground surface of an iron meteorite will look like freshly cut iron and a strong magnet will attract it; stony meteorites usually show silvery flecks scattered in a compact stony mass, and will be attracted only slightly, if at all, by a strong magnet.

The Center advises against breaking, hammering or cutting open a possible meteorite; the rough treatment will destroy some of the material and decrease its scientific value. Extreme heat, such as that of an acetylene torch will destroy the meteorite's interior.

The American Meteor Society adds that you should avoid handling the suspected meteorite as much as possible due to the possibility of contaminating the sample with salts and oils from your hands. (You will not be harmed by touching a meteorite.) Put the rock in a clean, dry plastic bag.

1. If you think you have found a meteorite, the Center suggests you take the following steps:
2. Carefully note the location in which you found it.
3. Take photographs (or sketches) of the meteorite and its location.
4. Answer the following questions about your find: Is the specimen heavy for its size? Is it solid and compact? Is it attracted by a magnet? Is it black or brown and rather smooth on the outside? Does it show metallic iron specks on a cut surface? If your answer to all these questions is yes, it's likely you have a space traveler. If all the answers are no, it's probably not a meteorite.
5. Contact the Center immediately if you believe you have found a meteorite. Send the suspected meteorite, the location description, photographs and answers to the above questions to Center for Meteorite Studies, Arizona State University, Tempe, AZ 85287-2504. The scientists there will determine whether or not it is a meteorite, free of charge. If it is a meteorite, they will contact you. If it isn't, they will return it to you.

Most public lands are off limits to the collection or removal of any kind of rocks, whether of terrestrial or extraterrestrial origin. The area around Meteor Crater is, contrary to some rock collecting books, definitely off limits, and is aggressively patrolled for trespassers. It's always a good idea to ask

before hunting for any kind of rock anywhere; it will prevent problems for you and give landowners a responsible impression of rockhounds. *From The Conglomerate, 4/2002*

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## VISITING METEOR CRATER

**Where:** Meteor Crater is located 6 miles south of Interstate 40 at Arizona Exit 233, about 35 miles east of Flagstaff and 20 miles west of Winslow, AZ.

**What:** The first-proven and best-preserved meteorite impact crater on earth. Videos and lectures are given periodically during the day.

Weather permitting, guided rim tours leave the museum several times a day. The rim trail is a primitive trail; visitors must wear rugged shoes, no open-toed shoes, sandals or thongs permitted. A paved walkway and viewing platform are also available, weather permitting.

A cautionary note: If you need to take the elevator to get to the museum, you probably shouldn't take the guided rim tour, especially if you are not used to mile-high elevation. Temperatures in the summer frequently exceed 100 degrees.

**Even when the weather is at its worst (high wind is the most frequent reason outside access is closed), the crater can be viewed from inside the museum.**

The museum displays include the history of the space program, interactive computers, and many meteorite specimens, including the largest piece (just over 1400 pounds) known to have come from the Barringer Crater.

The rock and gift shops carry a wide variety of gifts and souvenirs from refrigerator magnets to fossilized dinosaur eggs.

**Who:** All ages are welcome. Admission is charged. Elevators are provided for those unable to negotiate the stairs from the parking lot to the Visitor Center.

Meteor Crater is privately owned; National Park passes are not honored.

**When:** The Visitor Center is open year round. From May 15 to Sept. 15, hours are from 6 a.m. to 6 p.m.; from Sept. 16 to May 14, 8 a.m. to 5 p.m.

**Lodging and Food:** An RV park with full hook-ups is located just off 1-40 at the Meteor Crater exit.

There is a snack bar at the Visitor Center and a Country Store/Mobil gas station at the RV Park.

Lodging and restaurants are available in Winslow or Flagstaff.

For more information, call (928) 289-2362 or (800) 289-5898, or visit the Meteor Crater website at:

[www.meteorcrater.com](http://www.meteorcrater.com)

*Article from Rock & Gem Magazine, April 2002 (RGMS Editor's Note. If you are planning a vacation trip and are in the area of the Meteor Crater, the visit to the site is well worth the time. Speaking as a previous visitor, it is an awe-inspiring experience.) From The Conglomerate, 4/2002*