

HUI PŌHAKU 'O HAWAI'I

Rock & Mineral Society of Hawai'i, Inc.



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INCLUSIONS

BY DEAN SAKABE

Quartz is the most common mineral species on earth: it is found on just about every continent. Even our little corner of the world has several locations on different islands where Quartz specimens can be found. Consequently, with the large, diverse nature of quartz occurrences, there is an excellent chance that somewhere quartz will be found with something else growing by it only to be engulfed by the faster growing quartz crystal.

This foreign minerals encased in quartz are generically called *inclusions*. To find out about inclusions in Quartz, here is a simple two step process. (1) Obtain the August 2008 issue of Rock & Gem. (2) Turn to page 48, and read Mr. Jones article Quartz Stars, Phantoms and Arrows.

I for one have not heard of a Negative Quartz Crystal. But as Mr. Jones elaborates, it is an empty space inside a quartz crystal that looks like a real crystal. It may form when quartz is growing in a solution and there are not enough silicon dioxide molecules to fill in the growing crystal completely. The deficiency causes the available molecules to add to the growth at the prism edges leaving an internal gap, which develops into the exact shape of a quartz crystal. As more silicon dioxide molecules become available, crystal growth continues, and encloses the gap within the crystal.

Inclusions can be generalized as two types. (1) Minerals that formed earlier and were captured by later forming quartz. (2) Minerals that were forming in or floating in the hydrothermal fluids that were deposited on the growing quartz crystals. Exam-

hedenbergite, some hematite, and tourmaline crystals that formed early and had rock crystal deposited on it, thereby encasing the early minerals. The latter type includes chlorite, cookeite, hematite, mica, pyrite, galena, adularia, and many others that were deposited as the quartz was crystallizing. In some specific instances, such as asteriated quartz, rutile is thought to have been in solid solution in the quartz, and upon cooling, the rutile was forced out of the quartz structure, resulting in microscopic highly oriented needles. The light, playing off these oriented needles, presents a six-ray star typical of asterism. The various types of included crystals give rise to a variety of lapidary materials and uses.



(1) Double-phantom quartz
(Mato Verde, Brazil)

ROOM CHANGE!

PLEASE BE AWARE THAT WE WILL NOT BE MEETING IN THE ARTS AND CRAFTS ROOM. WE WILL NOW BE MEETING IN THE ADMINISTRATION BUILDING. THERE WILL BE HELPFUL SIGNS, TOO!

MEETING

Wednesday
September 24
7:00—9:00 pm
Makiki District
Park
Administration
Building
“Orange & Black
Minerals”

NEXT MONTH

Wednesday
October 22, 2008

LAPIDARY

Starts September
11
Every Thursday
7pm-9pm
Second-floor Arts
and Crafts Bldg
Makiki District
Park

MEMBERSHIP COSTS

2008

Single: \$10.00
Family: \$15.00

ples of the first type include rutile, actinolite,

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Inclusions, page 2

The first example of a quartz inclusion is in a Quartz itself. (1) Phantom quartz is caused when something temporary interrupts the crystal's growth process. Then, when the conditions change and the crystal starts growing again, small bubbles or small settling particles of fine grained minerals adhere to the crystal face of the newly growing quartz crystal. This process results in "phantoms" that look like a crystal grown inside of another crystal.

Enhydros are Quartz with fluid inclusions. These inclusions could have occurred when the edges of the quartz formed faster than the center. This forms troughs that sometimes trap water solution or other foreign matter. When these troughs were covered by more crystal growth, the captured water would "gas out" or cool and contract and a bubble would form in the liquid.

A common inclusion which you will find is Chlorite. This is an Iron, Aluminum, Magnesium Silicate Hydroxide group which form as a coating on a crystal early in the crystal growth.

Gold in Quartz (2) is another "inclusion", with the best specimens coming from the "sixteen to one" mine, in Alleghany, CA. The quartz is snow white, with almost pure gold veining thru out the quartz.

Nipomo Agate (3) is Marcasite plumes encased in clear agate. These prized agates were found in the bean fields of Nipomo, Ca. Sadly the bean fields are now covered by condos, so any examples of this agate you find are 15 years or older.

Spider Quartz, (4) this newly discovered quartz's from Madagascar, has Hollandite crystal inclusions within the quartz crystal which resemble little spiders within the quartz.

Examples of dendric inclusions include dendritic agate, flower stone, Indian agate, mocha pebble, river agate, and the descriptively-named scenic agate and tree agate, whose dendrites resemble the landscape and trees.

Chalcedony is a mineral porous enough to accept dyes, along with various

layers of agate. Examples of these stones include emeraldine, false lapis and Swiss lapis.

Some of these close associations of the varieties of silica suggest that quartz is an ultimate product of recrystallization which may take place after very long periods of time. Agate jasper, an intermediate between jasper and chalcedony, a close mixture, is often banded or veined. Examples include hemachate, hyaline quartz, jaspagate and jasponyx.

Many fossils are preserved by silicification of their soft parts, or of their calcareous shells and bones. Particular names are given to fossil corals like beekite, beekite, coral agate, and petrified honeycomb. Silicified wood also appears in chinarump, jasper-



(2) Gold in Quartz
16 to 1 mine, Alleghany, CA

**OUR ANNUAL ROCK SHOW
OCTOBER 11-12
OUTRIGGER HOTEL**

**MEMBERS HAVE AN OPPORTUNITY TO
BE VENDORS OR TO EXHIBIT THEIR
COLLECTIONS**

**MAHALO TO THE OUTRIGGER HOTEL!
CONTACT KEITH IF YOU WOULD LIKE
TO EXTEND YOUR MAHALO**



(3) Marcasite in
Quartz,
Nipomo, California



(4) Spider Quartz
Hollandite crystals
inclusions
Madagascar



**Cacoxenite and
Lepidochrosite in
Quartz (Brazil)**



Tourmaline in
Quartz
(Brazil)

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News and Notes, page 3

DOOR PRIZES

Please note that we have instituted door prize drawings at our monthly meetings. Because of Hawaii's gambling laws, these drawings cannot be conducted in the common "raffle" format where tickets are sold. Rather, each *paid* member attending the meeting will receive a drawing ticket upon request. A voluntary donation of \$1.00 is requested and encouraged. Drawings will be conducted at the end of the meeting with available prizes awarded in random order. You must be present to win. Please remember: if you win a prize, please bring one to the next meeting. This helps to keep our drawings going. Thank you.

WE HAVE A WEBSITE!

http://pohakugalore.net/Hui_pohaku/Hiu_pohaku_1.html

MAHALO TO MARKUS FOR HELPING US GET OUT OF THE ELECTRONIC STONE AGE!

THE METAPHYSICAL PROPERTIES OF QUARTZ INCLUSIONS BY JADE EMORY

Quartz amplifies the healing powers of any other mineral which is included within its hexagonal structure, and interesting effects occur when other stones occur as inclusions. Tourmaline, which works on balance disorders, epilepsy and inner ear problems, increases in strength when it lives within the quartz crystal. There is a beautiful yin/yang balance when these two stones grow together: tourmaline being yin and quartz being yang. Lepidolite contains the gas lithium, which helps people who suffer from precipitous erratic emotional mood swings. Quartz adds to the centering capacity of lithium when these two minerals are working together. Gold is a purifier, especially of the bloodstream. When gold grows with quartz, its energy is also strengthened, plus it looks gorgeous, too.

Sometimes quartz does not have another mineral within it, but rather another quartz crystal is within, called phantom quartz. What a powerful medicine stone! To begin with, the hexagonal crystal structure is very yang, very strong, and this can be tripled with a phantom termination.

Although quartz is considered a common and essentially not valuable stone, actually quartz is one of the most revered medicine stones to the Native American people because a true Medicine Person can begin a fire by barely touching a pile of kindling wood with a quartz crystal. Also, because quartz has a memory, it can be programmed like a computer. Imagine the positive messages we can provide ourselves subliminally if we program our quartz crystals wisely and well.

ALAN ZEIGLER SINKHOLE DEDICATION!

What wonderful news concerning about the preservation of areas of scientific interest here in Hawai'i! Since the Hawaiian islands are so isolated, the presence of eagles, owls, ducks, and geese in these sinkholes by Kapolei boat harbor is especially noteworthy. Keith Krueger was pleased to share this news, and to tell that Bill and other members of our rock club presented testimony to the city council. Funds have been set aside of zoning and education.

Rock & Mineral Society of Hawai'i, Inc.

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The Rock & Mineral Society meets on the 4th Wednesday of each month (except for adjusted dates in November and December) at the Makiki District Park, 7:00 - 9:00 pm. Enter from Keeaumoku Street. Parking is free but limited.

The Newsletter is published monthly, some days prior to the meetings and is distributed in electronic format by email (Adobe Acrobat PDF file attachment). Printed copies are "snail" mailed to those who do not have email. The electronic format usually contains full-color images; the print version may be limited to B&W due to reproduction costs.

Any newsletter comments are appreciated, and can be sent to elise.thomasson@gmail.com

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