

MAGS EXPLORER



Memphis Archaeological and Geological Society Youth Newsletter

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Herkimer Diamonds

MIKE BALDWIN--The MiniMAGS program for July is "Herkimer Diamonds" and "Collecting Gypsum", presented by Idajean Jordan. If you have ever collected quartz crystals from Mt. Ida, Arkansas, then you know how hard it can be to break the crystals out of hard rock. Breaking Herkimer Diamonds out of their matrix is an even more difficult task. That, plus the fact that you can only find them in Herkimer County, New York. If you happen to visit New York state, near Utica and the southern Adirondack Mountains, check out the Herkimer Diamond mines in that area.

Quartz crystals called Herkimer Diamonds are from Herkimer County, New York. They range in size from microscopic to over six inches long, and are characterized by very shiny surfaces, frequent high clarity, short, stubby bodies and double-terminations. A large percentage of them are under an inch in length with excellent clarity, which is the reason they are nicknamed "diamonds".¹

What Are Herkimer Diamonds?

Herkimer Diamonds are beautiful double-terminated quartz crystals found in Herkimer, New York. Incredibly, these gemstones are almost five hundred million years old. These magnificent crystals are found in the rock, having a diamond-like geometrical shape. Thus, the name recognition



Herkimer Diamonds

Illustration from Herkimer Diamond Mines, Inc.; <http://www.herkimerdiamond.com/meta.html>; 06 July 2003. Reprinted for educational purposes under the "fair use" provision of the U.S. Copyright Act.

of "Herkimer Diamonds". Herkimers rival true diamonds. A true diamond found in the rough is exactly that, a rough appearing glass-like stone. The true diamond must be painstakingly cut by man to give it smooth faces and a geometrical shape. On the Mohs Hardness Scale, a true diamond scores a ten-the hardest mineral. Herkimer Diamonds are seven on the hardness scale, giving the real diamond a close race. They are naturally faceted, each having eighteen faces and two points.²

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“Herkimer Diamond” crystals are found exclusively within a small stretch of rolling terrain in central New York State. It is mainly a ten by fifty mile swath of land with sporadic dolostone outcrops crossing Herkimer, Fulton, and Montgomery counties.³ The crystals are found in bedrock which began forming about half a billion years ago in a shallow Cambrian Sea that lapped against the southern shores of the ancestral Adirondack Mountains. The limy sediments (calcium magnesium carbonate) which slowly accumulated beneath the sea’s salty waters were gradually compacted under the weight of thousands of feet of additional sediments, forming the rock strata *Little Falls Dolostone*. While still beneath the sea, water seeped through the pores of the rock often creating “vugs” (small cavities) by dissolving part of the rock.²

The collecting methods range from casually looking along the prospecting area, to digging through the rubble, using crowbars, sledgehammers and heavy chisels. The most popular tools are a 2 or 3 lb. crack hammer and a bull point chisel. The most popular method of prospecting for loose Herkimer Diamonds is by breaking them out of a single rock.²

Some pockets in the table layer of rock are known to contain thousands of diamonds. Pockets or cups can be up to six feet in diameter and usually no less than one foot. The dome-like tops of the pockets are often lined with small, white cubic - shaped dolomite crystal. Occasionally, the top will be beautiful black druse quartz. Pockets containing diamond crystals are never the same either in size or in quality. Most pockets, as a rule, will contain diamond

crystals of various sizes. Some pockets may contain large crystals ranging in size from four to eight inches long and three to four inches wide. Other pockets with medium sized crystals range in size from an inch and a half to three to four inches long and a half inch to two inches wide. Micro crystals are always found. As the crystals move up in size they tend to become less clear or more translucent than transparent.²

Herkimers are primarily composed of silicon dioxide and may occasionally contain inclusions of iron pyrite, air, water, or more commonly bits of black fossilized organic plant material formally called “anthraxolite”.³ The anthraxolite resembles bits of black coal within the crystals. On rare occasions, an enhydro crystal can be found. Enhydro specimens are crystals that contain a water bubble within it. An even more greater find would be an enhydro with anthraxolite floating in the water bubble.² Very good crystals are perfectly shaped and water clear. Herkimer diamonds are the only naturally double terminated, water clear, quartz crystals on Earth. They come out of the ground already faceted! They are not “cut” or manipulated by machine in any way.³ Twins, doubles, clusters, tabulars, smokies, skeletal and phantom crystals are all valuable specimen found in pockets.²

The most perfect crystals are usually those less than 1/2” long, but occasionally much larger crystals are found. Crystals commonly occur intertwined or clustered and often tiny, perfect crystals are attached to the backs of larger ones. An avid business of trading has developed among the multitudes of collectors, many of whom possess literally

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thousands of specimens. The most perfect crystals are often used as display pieces in unusually attractive necklaces, earrings, and bracelets.²

References:

- [1] *Herkimer Diamonds*; Herkimer Diamond Mines, Inc.; <http://www.herkimerdiamond.com/meta.html>; 06 July 2003.
- [2] *What Are Herkimer Diamonds?*; Herkimer Diamond Mines, Inc.; <http://www.herkimerdiamond.com/meta.html>; 06 July 2003.
- [3] Tim Delaney; *Global Distribution: World Class Crystals*; Herkimer Diamond Source; <http://www.herkimerdiamondsource.20m.com/>; 07 July 2003.

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To learn more about Herkimer Diamonds, visit these websites:

- [1] Brooks H. Britt, Jr.; *Herkimer Diamonds*; <http://www.rockhounds.com/articles/brooks/index.html>
- [2] *What Is A Herkimer Diamond?* [originally found at www.herkimerdiamond.com]
http://www.memphisgeology.org/g_herkimer.html
- [3] *Quartz var. Herkimer Diamonds; New York, USA*;
<http://www.geodegallery.com/herkimer.html>
- [4] Treasure Mountain Diamond Mine;
<http://www.treasuremt.com/>
- [5] *Herkimer Diamond Mines*; Roadside America.com;
<http://www.roadsideamerica.com/attract/NYMIDdiamond.html>
- [6] Tim Delaney; Herkimer Diamond Source;
<http://www.herkimerdiamondsource.20m.com/>
- [7] Carmy Witsky; *In Herkimer, Mining for Diamonds*;
http://www.answerpoint.org/columns2.asp?column_id=741&column_type=feature
- [8] Herkimer Diamond Mines, Inc.;
<http://www.herkimerdiamond.com/>

OR GO TO

www.yahoo.com or www.google.com and search for "Herkimer Diamonds". There's lots of information on the web just waiting for you to find. Kids, always check with your parents before you search the internet.

Herkimer Diamonds

Tim Delaney, Herkimer Diamond Source. Reprinted for educational purposes under the "fair use" provision of the U.S. Copyright Act.

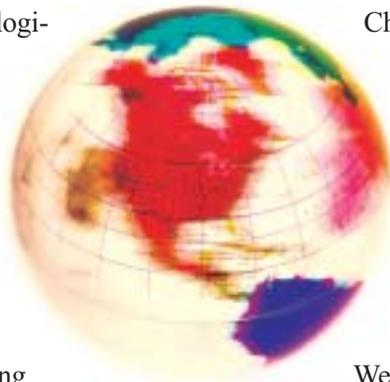


Earth Science Week 2003

Attention Students: Celebrate Earth Science Week October 12-18, 2003!

Since October 1998, the American Geological Institute has organized this national and international event to help the public gain a better understanding and appreciation for the Earth Sciences and to encourage stewardship of the Earth. This year's Earth Science Week will celebrate the theme "Eyes on Planet Earth: Monitoring our Changing World".

There are many ways you can get involved in Earth Science Week 2003. Visit the Earth Science Week website at <http://www.earthsciweek.org/> and stay up to date on the latest plans for Earth Science Week 2003 by reading a monthly newsletter, the *Earth Science Week Update*.



Check out the links to what's gone on during past Earth Science Weeks. Read news articles, press releases, and reports. For information on Earth Science Week beyond 2003, check out the list of future themes and dates.

Want to participate in Earth Science Week 2003? Get involved by entering one of this year's contests. You can also complete the Geosciences Career Webquest to test your knowledge of what Earth scientists do. If you are a girl scout or a boy scout or a member of MAGS or another Junior Rockhound group, find out how to earn an ESW Activity Patch by participating in Earth Science Week.

Notes from the meeting

1. What is the name of the July Specimen-of-the-Month? _____
2. Cut out the specimen card below, fold it in the middle, and put it with your mineral specimen.
3. Write down a few things you know about Herkimer Diamonds. _____
4. July MAGS Field Trip will be July 19-20 to Magnet Cove, Arkansas to collect various minerals. Sign up tonight!
5. This is your newsletter. Put your name on it, and take it home with you.

Your Name _____

<p>Composition: $K(Mg,Fe)_3(Al,Fe)Si_3O_{10}(OH,F)_2$ Hardness: 2.5-3 Cleavage: Perfect, one direction Crystals: monoclinic Color: black, brownish black, greenish black, dark green Location: Trout Creek Pass, Colorado</p>	<p>Biotite Mica Specimen of the Month July, 2003</p>	
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