

THE LAKE AGASSIZ ROCK HOUND

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Find Life on Mars, Atacama Desert Practice

Article edited and redacted for educational purposes. See full article at:

<https://www.sciencedaily.com/releases/2019/02/190228075610.htm>

One of the most stark, barren regions found on earth is the Atacama Desert, which sits between the Andes and Chilean Coast Range at such a height that the altitude prevents moisture from reaching it from the Pacific or Atlantic Oceans. The Atacama receives less than 1mm of rainfall per year and some parts of the desert have no recorded rainfall at all. It is the closest thing to the Martian surface that the scientists have been able to find. If there was ever a place to rehearse the task of looking for signs of life, this is it.

Stephen Pointing, a Professor at Yale-NUS College, Singapore, has led a microbial research using beta-version robotic rovers they have now refined and are send to Mars. The devices were funded by NASA and designed by Carnegie-Mellon's Robotics Institute.

The researchers took the instruments to Chile and coded their routines to sample subsurface Atacama soils. Pointing comments "This is important because most scientists agree that any life on Mars would have to occur below the surface to escape the harsh surface conditions where high radiation, low temperature and lack of water make life unlikely."

An autonomous rover-mounted robotic drill and sampling device was tested to see if it could successfully recover sediment samples down to a depth of 80cm. (about 31 inches) Pointing and his colleagues compared samples recovered by the rover to soil samples carefully taken by hand.



A Beta-trial NASA rover mission in the Mars-like Atacama Desert.
Credit: Prof Stephen B. Pointing

The samples contained unusual and highly specialized microbes that were distributed in patches, there in the Atacama, which researchers linked to the limited water availability, scarce nutrients and chemistry of the soil. Pointing continues, "We found microbes adapted to high salt levels, similar to what may be expected in the Martian sub-surface. These [underground] microbes are very different from those previously known to occur on the *topsides* of deserts." In 2020 both NASA and the European Space Agency will embark on missions to deploy rovers to Mars. They will search for evidence of past or present life and, for the first time, drill below the sand where spots for simple microbial life may still exist. To help ensure that these space missions succeed, technology is rigorously tested on Earth first.

These findings were published in *Frontiers in Microbiology*.

Conceptual image of the Mars 2020 rover – NASA/JPL



Galde to demonstrate at next meeting!



Marlin Galde stands by his elegant exhibit at Chahinkapa Zoo that features 100 replica arrowheads. He spent a year creating more than 100 spears, blades and points for the display.

Please Come to the LARC

(Month) 2019 Meeting

Wednesday May 1st 7:00 pm
Stevens Hall Room 134, NDSU

Program:

Marlin Galde

will share his knapping skills in a two-fold demonstration; One for the adults and a short "special demo" for the Pebble Pups during their den.

Guests are always welcome!

Lake Agassiz Rock Club

President: Frank Svezia
Vice President: Nina Flippance
Treasurer: Terry Mallick
Secretary: Chris Patenaude
Youth Group/Pebble Pups: Nina Flippance
Program planning ideas/volunteers welcome

What is our Purpose?

To create an interest and promote a knowledge of all phases of geology or earth sciences in an informal setting.

Where and When Do We Meet?

The Geology Lab, Room 136, lower level of Stevens Hall, NDSU, Fargo. Time: 7:00 p.m. This placement may change soon as we are seeking a larger space for our members. Directions meanwhile:

[From N. University Dr. turn West on 12th Ave N. Turn North on Bolley Dr. Drive just past Centennial Boulevard. See **Stevens Hall** on west side of Bolley, 2nd hall from the corner. To park, go into next driveway ahead, on the left. Drive west, then left again behind a lab building to Stevens Hall back-lot. Enter E. door or call a member to hold N. door.

How Much Are the Dues?

Single person—\$20.00; Family—\$30.00; College (any school) students and youth (if not a family member)—\$10.00 per year. Send dues to Terry Mallick, Treasurer; 416 3rd Avenue S., Moorhead, MN 56560. Or contact him during regular meetings.

What Happens at Meetings?

Our youth group The Pebble Pups attend their own separate group meeting, while the adults cover business. The kids join us for the main Program; a silent auction of collectable minerals; and "lunch".

What are some of our Club Activities?

Field trips are taken to areas ND, SD, and MN. We fundraise at the R.R.V. Fair. LARC sponsors a scholarship to an outstanding Geology student at NDSU each year. Personal Info lessons can be arranged for pre-meeting times. Lots of Show & Tell at meeting nights!

What are Our Club Affiliations?

We are affiliated with the American Federation of Mineralogical Societies. (**AFMS**) We are in the subsector Midwest Federation of the Mineralogical and Geological Societies. (**MWF**)

How Do We Keep in Touch?

Website: > <http://www.lakeagassizrocks.com/> <
Facebook: > lakeagassizrocks.com/about.php <
The Lake Agassiz Rock Hound is our monthly bulletin e-mailed 7 days before meetings. Paper copy free to active members **without** computer access. \$15 dollar subscription/ yr. for hardcopy to members who want one in addition to their e-addy. **Send news tips and articles** to the editor: Chris Patenaude P.O.Box 434, Perley, MN 56574 or email LakeAgzRC70@yahoo.com. Rock Hound articles may be reprinted if full credit is given, unless otherwise noted.

LARC is an all-inclusive, diverse group. We welcome and respect every person in regard to age, gender, heritage, language, social class or disability. Discrimination or ill will towards another will not be tolerated. We are here to support any and all who love the hobby.

Minutes from April 3, 2019 Meeting

Submitted by Chris Patenaude, Secretary

7:35 PM Meeting opened by VP **Nina F.** as Frank was away. Nina announces some exciting plans to take the Pebble Pups on a field-trip to the Heritage Center and Historical Museum in Bismarck (ND). There are some very exciting rock, stone and mineral exhibits as they relate to a core part of North Dakota history. Many adults instantly begged to drive along with any caravan.

Secretary minutes from March were moved to approve and 'ayed'. Treasurer report was short, RRVF footprint paid, NDSU savings to the scholarship are on target. **Merle H.** moves to approve, ayes. The display cases for the RRVFair are in desperate need of fixing or even near structural replacement. **Tony & Nina F.** invite us to their place, when it is warmer, for a hands on, volunteer Repair Fest. Tony has the facilities, tools and connections with donate-able materials to make a true party of the occasion. Both Tony and Nina are avid DIY-ers and can help with activity questions.

There is a fantastic explosion of new members ever since the Club put their fundraiser footprint on the RRVF outdoors tarmac. There are many questions about what we do at the Fair and how the kids' activity functions. **Nina** says she can put together a compact FAQ sheet with answers about how we go about where to meet, Setting Up the Tents, What to expect, How To Display etc.

It has been asked that **Frank S.** might print off 8 or 10 copies of the meeting agenda notes to share around the room so we can keep on topic, better. Our meetings have distracting interests of all kinds popping up. It might be less confusing if we all know what topics were key to being settled ahead of time. Can **Tony F.**, as webmaster, find and print a few copies of the Club By-Laws, too?

Also, with our fresh intake of membership numbers, we are losing touch with each other and who's in the Club. Confidentiality has been primal to the record-keeping for membership, but we all have the right and need to know who other members are, who can't get to the Wednesday nite meetings. Crispy will create a list of names only, no personal address or phone numbers, to e-mail out. Those who function without e-mail contact can write to the Perley, MN [P.O. Box 434] on the Rock Hound, and you'll get mailed a list.

As a subset to that idea, the Facebook page privacy settings were discussed and explained. The site monitors are happy to e-mail to anyone among our Facebook participants about these details for that connection.

Terry and Amy H. inform us that many big org's. (like Blue Cross/Shield etc.) offer grants to non-profits for the asking. Do we have someone good at grant writing who might be interested in looking into what gifting activities there might be out in the nets?

Marlin Galde says he'll do demos next month!

Tonight's presentation was by the NDSU Geology Club by their president Sara. She did a slide show on the shimmering Salar de Uyuni salt flats in the Atacama Desert, Chile.

BRAD'S BENCH TIPS

PICKLE PRECAUTIONS

A hot pickle pot gives off fumes that bother me in my home workshop. I get around that by using my pickle cold. I mix it a little stronger than for a hot pot so that it works almost as quickly. I keep it in a large-mouth plastic bottle and cap it off when I'm done using it.

Be More Productive With Brad's "How To Do It" Books
[Amazon.com/author/bradfordsmith](https://www.amazon.com/author/bradfordsmith)

MWF Calendar for Shows MAY 2019

<http://www.amfed.org/mwf/Calendar/May.html>

4: NORTH LITTLE ROCK, AR Central Arkansas Gem, Mineral & Geology Society Rock Swap. 9 am - 3 pm. Eldor Johnson Pavilion, Burns Park, North Little Rock. Contact: Barbara Champagne, (501) 258-2516; cagmagprez@gmail.com

4-5: MARSHFIELD, WI Heart of Wisconsin Gem & Mineral Society Annual Show. Sat 10 am - 5 pm; Sun 10 am - 4 pm. Marshfield High School Fieldhouse, 1401 Becker Rd., Marshfield. Contact: Cynthia Kelman, (715) 387-8782; kelman@tznnet.com www.heartofwisconsinrocks.com

4-5: SHARONVILLE, OH Cincinnati GeoFair 54th Annual Gem, Mineral, Fossil & Jewelry Show of Greater Cincinnati. Sat 10 am - 6 pm; Sun 11 am - 5 pm. Sharonville Convention Center, 11355 Chester Rd., Sharonville. www.genfair.com **FLYER**

4-5: DAVENPORT, IA Blackhawk Gem & Mineral Club Semi Annual Show. Sat 10 am - 5 pm; Sun Noon - 4 pm. Putnam Museum & Science Center, 1717 W. 12th St., Davenport. Contact: Craig or Kellie Moore, (563) 299-5740; kalsinean@gmail.com

10-12: COLUMBIA, MN Central Missouri Rock & Lapidary Club Annual Show. Fri Noon - 7 pm; Sat 9 am - 5 pm; Sun 10 am - 4 pm. Knights of Columbus Hall, 2525 N. Stadium Blvd (Route E), Columbia. Contact: Marh Wozny, (573) 999-3058; lmwoz@msn.com

11-12: BRAINERD, MN Cuyuna Rock, Gem & Mineral Society Annual Show. Sat 9 am - 5 pm; Sun 10 am - 4 pm. Crowwing County Fairgrounds & Curling Arena, 2000 SE 13th Street, Brainerd. Contact: Sharon Smith, (218) 829-4992; sharon@aqatesrock.com www.cuyunarockclub.org

17-19: JOPLIN, MO Tristate Gem & Mineral Society Annual Show. Fri & Sat 9 am - 5 pm; Sun 9 am - 3 pm. Joplin Museum, 504 Schifferdecker Ave, Joplin. Contact: Chris Wiseman, (417) 623-1180; jmc-cwiseman@sbcglobal.net

18-19: ST. JOSEPH, MI Blossomland Gem & Mineral Society Annual Show. Sat 9 am - 6 pm; Sun 12 noon - 6 pm. Lake Michigan Catholic Elementary School, 3165 Washington Ave, St. Joseph. Contact: Pam Kriegsmann, (630) 779-8258; blossomlandrockclub@gmail.com

18-19: N. OLMSTED, OH Parm Lapidary Club Annual Show. Sat 10 am - 6 pm; Sun 10 am - 5 pm. Soccer Sports Plex, 31515 Lorain Ave., N. Olmsted. Contact: Holly Zewalk, parmalapidary@yahoo.com www.parmalapidary.org

18-19: WAUWATOSA, WI Wisconsin Geological Society Gem, Mineral and Fossil Show. 10 am - 5 pm both days. Children's Activities, Exhibits, Dealer and Club Sales, Free Parking. Admisson \$3 or 2/\$5. Accompanied children free. Muellner Bldg at Hart Park, 72nd and State Street.

23-24: CEDAR RPAIDS, IA Cedar Valley Rocks & Mineral Society Annual Show. Sat 8:30 am - 6 pm; Sun 9:30 am - 5 pm. Hawkeye Downs, 4400 - 6th St., Cedar Rapids. Contact: Marv Houg, (319) 364-2868; m-houg@yahoo.com www.cedarvalleyrockclub.org

25-26: ST. CHARLES, IL Chicagoland Gems & Minerals Association Annual Show. Sat 10 am - 6 pm; Sun 10 am - 5 pm. Kane County Fairgrounds, 525 S. Randall Rd., St. Charles. Contact: Debby Ballot, (630) 272-8275; demarrex1@att.net www.cgma.rocks

31- 6/2: WAUSEON, OH State Line Gem & Mineral Society Annual Show and MSHA Training by Joel Vicary. Fri 12 noon - 6 pm; Sat 10 am - 6 pm; Sun 11 am - 4 pm. Fulton County Fairgrounds, Junior Fair Building, 1814 SR 108, Wauseon. Contact Sherman Kardatzke, (517) 673-5487; sakardatzke@gmail.com <http://statelinegms.com>

From: TIPS AND TRICKS for ROCKHOUNDS By KenO James at Mindat.org

<https://www.mindat.org/article.php/1782/Tips+and+Tricks+For+Rockhounds>

Listening to sounds can be a great tool to find excellent specimens too. Instead of using just eyesight, try tapping the rock walls with a hammer while listening carefully. A vug (hollow cavity) behind the wall will make a dead hollow sound which is distinctively different than a solid rock sound. And vugs can result in you collecting some amazing crystals.

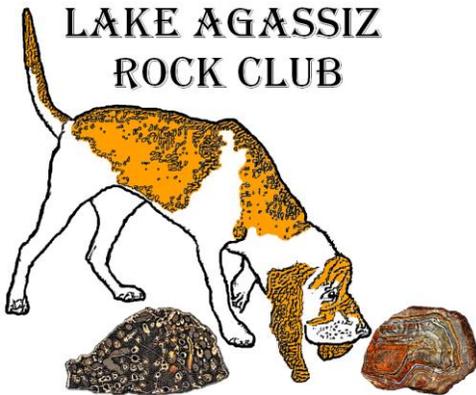
Don't take excessive weight and items into a site that requires a long hike to reach. On my first adventure, I had loaded up my backpack with every tool imaginable and carried a shovel, crowbar, and large sledge hammer to the site located deep in the woods. After a surprisingly lucky day of finds, I was ready to return to my truck. After loading up my backpack, 2 pails, and pockets with new found rocks, I found it was impossible for me to carry it all! It actually took me 3 trips to retrieve my loot *and* the tools for the day.

Your best bet at a new site is to look for signs of earlier prospecting. Watch for an imprint of where a target crystal was located or fragments of minerals scattered on the ground. Then you know that product was found there and that there is probably more located very close by. My experience has taught me that minerals develop in a line so just find the next point.

Also, however, I have found that my first trip to any site is not as successful as consecutive trips. Return trips seem to reap more benefits as greater knowledge and experience of the site are gained with each visit. So plan a second visit to the area if possible.



Lake Agassiz Rock Hound
P.O. Box 434
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Mama Look What We Can Do With It Now!

An engraved gem, often called an “*intaglio*”, is a small and usually semi-precious gemstone that has an image carved on it. Since Ancient times, engraved gemstones were a major luxury art-form around the globe. These were often created specifically for status ‘seals’ to press or stamp official emblems on critical documents. So these pieces were sometimes set into elaborate pendants or rings for personal safe keeping.

Gems were mostly cut by using abrasive powder from harder stones along with a hand-drill, or in later times, a simple lathe or mini, spinning wheel...ancestor to “Dremel” ideas. Emery (garnet grit) has been mined for abrasive powder since antiquity.

With the invention of bubble-free glass or modern prospecting for larger, flawless stones, the idea of **Reverse Intaglio** has been elevated to new illusionary heights. Carving into the backside of a transparent medium, whether natural or common (or rare and expensive) the image is intended to be viewed from the opposite side of the stone, while backlit, to create the impression of a floating, 3-D creation inside the piece.



Ancient Roman intaglio portrait in amethyst



Archaic “scarab” form Etruscan Satyr



Baltic Amber from 1970's, back-side (above) & front view (rt.)



Reverse intaglio (rt.) from the carving artist Stinson. Quartz w/ gold accents “Second Time Traveler” from 2016 work



amateur reverse “dragon” on quartz, in blue light