



# Cedar Valley Gems

Cedar Valley Rocks & Minerals Society

Cedar Rapids, Iowa

[cedarvalleyrockclub.org](http://cedarvalleyrockclub.org)

CEDAR VALLEY GEMS

NOVEMBER 2017

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## Next CVRMS Meeting MONDAY NOV. 20

**Hiawatha Community Center**  
101 Emmons St., Hiawatha - 7:15 pm

ANNUAL MEETING – ELECTION (see page 3)



presented by **Bill Desmarais**  
Member in Good Standing  
Cedar Valley Rocks and Minerals Society

Society members Bill and Karen Desmarais will share their experiences traveling through the extremely wild and scenic southeastern part of our great state of Alaska. From Juneau to the Tongass National Forest and to Glacier Bay National



Park, this part of Alaska is rich with wildlife, forests, and glaciers. This experience included boating with humpback whales and sea otters to watching tidewater glaciers calve into the sea. The geology of this area is as diverse as the scenery and the history of the native Tlingit people highlight this amazing area. Come explore Southeast Alaska with us.



An enormous \$315 million emerald rock discovered in a gem mining field in Brazil is being kept under heavy security in a secret location as the owner exclusively revealed he is living in fear of kidnapping, extortion and armed robbery. The private holder, who can only be identified by his initials, FG, said the giant stone is extremely rare because of its "considerable size and the quality of its gigantic crystals." The risks of a heist are high in Brazil where criminal gangs use explosives to raid banks and carry powerful firearms. The massive emerald, which weighs 794 pounds and stands around 4.3 feet high was unearthed a month ago, 656 feet deep inside the Carnaiba Mine, a gem-rich mineral exploration area in Bahia, northeast Brazil.



The cautious owner said this week: "I can't reveal anything about the whereabouts of the stone, how it's being kept and how much I paid for it. All I can say is the stone is being moved frequently from secure location to secure location under armed guard. I cannot take any chances with my family's lives by keeping the stone in one place where it could be found." There are only two giant stones with this density of crystals in the world, and according to FG, the other one, the slightly larger Bahia emerald, which was the subject of a legal dispute over ownership between Brazil and America, "does not possess the same pure quality as the new Carnaiba emerald." The secretive keeper, who is currently finalizing the legal paperwork for ownership, described the find as "a majestic and beautiful monument."

<https://www.geologyin.com/2017/08/emerald-weighing-more-than-600-pounds.html#more>

## CVRMS Oct. 10 Meeting

### Hiawatha Community Center

Regular Meeting Minutes – October 10, 2017

Called by President Marv Houg at 7:20

**Guests:** Adriana Herrote-Wirth, a junior at UI.

**Secretary's Report:** Motion was made by Tom Whitlatch to approve the secretary's report as published. 2nd by JJ Buchholz. Carried.

**Treasurer Dale Stout** was out of town, so there was no report.

**Program:** UI Professor Jane Gilotti and 3 undergraduates, Schaffer Finney, Nick Johnson and Kevin ?, presented programs on their summer Field Camp.

### Field Trips:

Bill Desmarais reported there were still 10 seats left for the bus trip to Augustana's Fryxell Museum in Davenport, followed by the Lizzadro Museum of Lapidary Arts in Elmhurst, Illinois, on Saturday, October 21. The bus will leave the Cedar Valley Transit bus depot in Cedar Rapids at 6:30 a.m. and the Clarion Hotel in Iowa City at 7:00 a.m. The plan is to leave Fryxell about 9:30, stop to eat at De Kalb Oasis and arrive at the Lizzadro between 12:30 and 1:00, returning to Iowa City about 8:30 and Cedar Rapids about 9:00

Marv announced a field trip to Klein Quarry in Iowa City on November 5. Hard hat, safety vest and hard-toed shoes required; goggles recommended; long pants required. Suggested tools are bucket, rock hammer, chisel and water. The trip is limited to the first 60 to reserve a spot.

Lisa Blunt announced she knows someone with a quarry next to the Behrens Quarry in Monticello and will ask if the club can go in.

Marv announced the Ernst (formerly called Dingleberry) and Keota quarries have water in them when rock is not being crushed, so they are not accessible.

### Old Business:

**Ray Anderson** announced Senator Joe Bolkcom, from Iowa City, has agreed to have his staff put together a bill to have the crinoid named the State fossil. After that, we will pursue getting the information out to schools, etc., to get a campaign going.

**November Meeting** will be on the 20th, the 3rd **Monday** of the month. **December Holiday Party** will be 2nd Tuesday as usual for the party.

### New Business:

Tom asked for a list of members who have passed away within the last 6 months to present at the MWF meeting. Kate Burns and Sue Houg were named, and Sharon Sonnleitner will check records for others.

AJ Johnson will talk to 80 4th graders at Prairie about rocks.

Ray announced the Iowa City Library would like a rock display.

Tom asked that Federation dues be sent in early and reminded the group we need to pay for every member, not just active ones.

### Adjournment:

AJ made a motion to adjourn. 2nd by Tom. Adjourned at 9:40.

Respectfully submitted,  
Sharon Sonnleitner, Acting Secretary

## CVRMS Board Minutes Oct. 31

Called at 7:20 at the Home of Marv Houg

**Present:** Marv Houg, Dale Stout, Ray Anderson, Jay Vavra, Sharon Sonnleitner, Rick Austin

**BUS TRIP:** Twenty-nine members went on the October 21 bus trip to Augustana's Fryxell Museum and the Lizzadro Museum in Elmhurst, Illinois. Both museums were excellent. Because Fryxell did not charge admission, Dale made a motion to donate \$150 (basically \$5/person, equivalent to Lizzadro's charge) to the museum. Seconded by Jay and carried. The motion will be taken to the November meeting for consideration by the whole membership. Mike and Susan Wolf, curators of Fryxell agreed to lend 2 nice pieces of Legrand crinoids to display at our show.

Marv will ask for a motion to have a trip again next year. Suggestions were Milwaukee, Beloit and Madison museums. Ray suggested we should name the trip, maybe Fall Annual Rock Trip or Rocktober Trip. There was also discussion of doing an overnight bus trip to a farther-away place like Michigan or the Smithsonian every 5 or 10 years and of doing a collecting trip of individuals like the previous trip to Arkansas for diamonds and quartz crystals.

**CRINOID AS STATE FOSSIL:** Ray is waiting for Joe Bolkcom to produce a bill.

**SHOW:** Ray will check about getting some Burlington crinoids from the Smithsonian. We will also try to get some Gilmore City crinoids for display.

There was discussion about what to replace the bone dig with for the UI geology club, since we don't have enough bones left. Shark teeth, polished agates, and a variety of specimens were discussed.

Marv appointed Ray and Sharon as co-chairs of the 2019 show. Jay volunteered to help, too. Ray has already done some leg work. We will also need a theme.

**NOMINATING COMMITTEE:** The Nominating Committee of Dale, Jay and Ray presented the following slate for the election to be held at the November Annual Meeting:

President: Marv Houg  
Vice President & Editor: Ray Anderson  
Treasurer: Dale Stout  
Secretary: Dell James  
Liaison: Bob Roper  
Webmaster: Sharon Sonnleitner  
Director to 2020: Jay Vavra

Dale made a motion to adjourn. Second by Jay. Adjourned at 9:30.

Respectfully submitted,  
Sharon Sonnleitner, Acting Secretary



### ELECTION OF CVRMS OFFICERS AT NOVEMBER ANNUAL MEETING

The November 20 CVRMS meeting is our official **Annual Meeting**, which means that it is time for members to elect club officers, who serve 2 years, and a Director, who serves 3 years. Joy Cummings has resigned from the position of Club Liaison, so the nominating committee has suggested **Bob Roper** as a replacement for Joy and the retention of the other current officers. The suggested officers include:

<b>President</b>	Marv Houg
<b>Vice President</b>	Ray Anderson
<b>Treasurer</b>	Dale Stout
<b>Secretary</b>	Dell James
<b>Editor</b>	Ray Anderson
<b>Liaison</b>	<b>Bob Roper</b>
<b>Director '20</b>	Jay Vavra
<b>Webmaster</b>	Sharon Sonnleitner

Anyone interested in serving in one of these offices may enter their name at the November 20 meeting and club members present will vote to elect club officers.

## Tsavorite Garnet



**Tsavorite** is a calcium-rich garnet known for its brilliant green color. It sometimes serves as an alternative stone to emerald. It is the most important green garnet and one of the rarest and most valuable colored stones

## Spotlight Gemstones: Citrine / Topaz

### November's Birth Stones



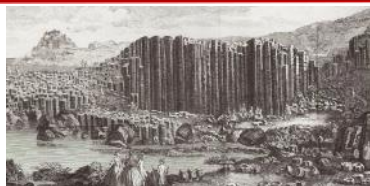
**Citrine** is a member of the large quartz family ( $SiO_2$ ), which, with its multitude of colors and structures, offers gemstone lovers almost everything their hearts desire in terms of adornment and decoration, from absolutely clear rock crystal to black onyx. The name *citrine* is derived from its color, the yellow of the lemon (although the most sought-after stones are a clear, radiant yellowish to brownish red). Like all crystal quartzes, the citrine has a hardness of 7 on the Mohs scale and is relatively resistant to scratches. With no cleavage it is also resistant to fracturing. Although citrine's refractive index is relatively low, the yellow stones have a mellow, warm tone that seems to have captured the last glow of autumn. Natural citrines are rare, and most good quality stones are found in Minas Gerais, Brazil, Madagascar, and Hasawarka in the Ural mountains of Russia. Most commercial citrines are heat-treated amethyst or smoky quartz.

**Topaz** ( $Al_2SiO_4(F,OH)_2$ ) is one of the few gem minerals that contains fluorine. The gem can be found in many varieties; colorless, pink, and shades of yellow to sherry-brown are most common, but blue and green-blue stones can resemble aquamarine, and natural red and pink colors are extremely rare. Sherry colored crystals can be heat-treated before cutting, producing pink topaz, a process called "pinking." Its hardness of 8 makes it very resistant to scratching. **Orange topaz**, also known as *precious topaz*, is the traditional November birthstone (and the state gemstone of Utah), while blue topaz is the birthstone for December. Topaz is commonly associated with silicic igneous rocks (granite and rhyolite). It typically crystallizes in granitic pegmatites or in vapor cavities in rhyolite lava flows including those at Topaz Mountain in western Utah. The American Golden Topaz is the largest piece of cut yellow topaz in the world. It is sized at 22,892 carats (10 lbs) and has 172-facets (flat-faced cuts applied to gems, in order to help them reflect light.) The gem was cut from a piece of yellow topaz that was 26 lbs in size, discovered in the Minas Gerais, Brazil. It was donated to the Smithsonian Institute, and put on display in the National Museum of Natural History in Washington, D.C.

# What in the World?



What in the World is this big old hunk of rock and why is displayed this way??



View of the Giants Causeway  
Drury, 1740

# October's Photo



October's **What in the World? Photo** showed the **Darvaza gas crater**, known locally as the "**Door to Hell**" or "**Gates of Hell.**" It is a sinkhole that collapsed during exploration drilling in a natural gas field near Derweze, Turkmenistan. To prevent the spread of methane gas geologists set it on fire, and it has been burning continuously since 1971. The diameter of the crater is 226 feet and its depth is 98 feet.

## Rock Calendar 2017

### CVRMS Events of Interest

**Nov. 5 - Field trip to Klein Quarry**  
Coralville (Joint MAPS /CVRMS)

There is a limit on the number of attendees. Please contact Marv Houg ASAP if you plan on attending: [M\\_houg@yahoo.com](mailto:M_houg@yahoo.com). The quarry requires all to be at least 12 years old. Meet at the main entrance to Klein [at 8:45](#) to sign in and get safety instructions. Enter the quarry [at 9:00](#). This is a lock-in quarry. You may only leave at Noon and 4:00 pm.



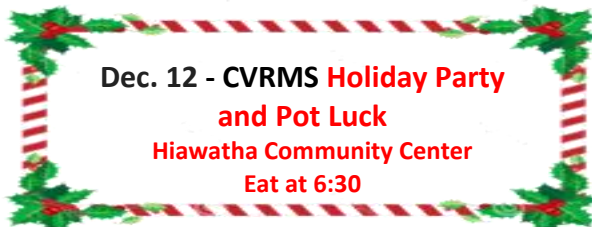
**Nov. 20 - CVRMS Monthly Meeting**  
**Hiawatha Community Center**

program - **Bill Desmarais** "Southeast Alaska, Puts the Awe in Awesome!"

*see Page 1 for details*



**Dec. 12 - CVRMS Holiday Party**  
**and Pot Luck**  
**Hiawatha Community Center**  
**Eat at 6:30**



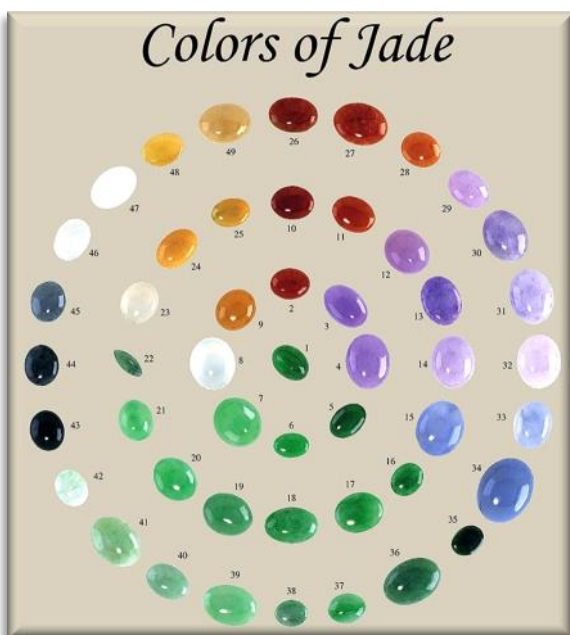
# Ask a Geologist

by Ray Anderson aka "Rock Doc", CVRMS Vice President

**Ask a Geologist** is a monthly column that gives CVRMS members an opportunity to learn more about a geologic topic. If you have a question that you would like addressed, please send it to [rockdoc.anderson@gmail.com](mailto:rockdoc.anderson@gmail.com), and every month I will answer one in this column. Please let me know if you would like me to identify you with the question. I will also try to respond to all email requests with answers to your questions, regardless of if it is chosen.

**Rona asked:** "You seem to be pretty excited about the jade sculptures that you saw on your field trip to Lizzadro's Museum. Jade doesn't look like other gemstones. What is jade ?? and how does it form ??"

**Rock Doc replied:** **Jade** is a cultural term used for a very durable material that has been fashioned into tools, sculptures, jewelry, gemstones, and other objects for over 5,000 years. It was first used to manufacture ax heads, weapons, and tools for scraping and hammering because of its toughness. Then, because some specimens had a beautiful color and could be polished to a brilliant luster, people started to use **jade** for gemstones, talismans, and ornamental objects. Although most people who think of **jade** imagine a beautiful green gemstone, the material occurs in a wide variety of colors that include green, white, lavender, yellow, blue, black, red, orange, and gray. Originally, all **jade** objects were thought to be made from the same material. However, in 1863 a Frenchman, Alexis Damour, discovered that the material known as "**jade**" could be divided into two different minerals: **jadeite** and **nephrite**. Because these two materials can be difficult to distinguish, and because the word "**jade**" is so entrenched in common language, it is widely used across many societies, industries, and academic disciplines. The word "**nephrite**"



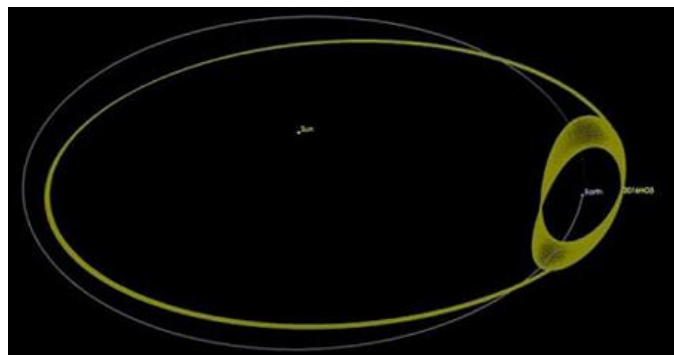
is also an imprecise term, used for materials composed of the minerals **actinolite** and **tremolite**. **Jadeite** and **nephrite** have distinctly different mineral compositions. **Jadeite** is an aluminum-rich **pyroxene** ( $\text{NaAlSi}_2\text{O}_6$ ), while **nephrite** is a magnesium-rich **amphibole** [ $\text{Ca}_2(\text{Mg}, \text{Fe})_5\text{Si}_8\text{O}_{22}(\text{OH})_2$ ]. However, the two minerals have very similar physical properties in the eye of the average person. Only trained observers with significant experience are able to reliably differentiate them without mineral testing equipment. This is why **jadeite** and **nephrite** were not properly distinguished by scientists until 1863. Both minerals form through metamorphism and are mostly commonly found in rocks associated with subduction zones. Therefore most **jadeite** and **nephrite** deposits lie along the margins of current or geologically ancient convergent plate boundaries involving oceanic lithosphere. **Jadeite** is typically found in rocks that have a higher pressure origin than **nephrite**. This leads to a geographic separation of most **jadeite** and **nephrite** deposits. From ancient times, much of the prospecting for **jade** has been done in the steeper parts of drainage basins, where pebble- to boulder-size pieces of rocks are found in stream valleys. Boulders and pebbles of **jade** normally have a brown weathering rind that hides their inner beauty and potential value. Small windows are often cut into the boulders in the field to assess the material's quality and to determine if it

is worth the labor of transport. **Jade** boulders can be very difficult to move without damage. Human and animal labor was the only way to transport them historically. That is still the method of collecting the boulders in some areas, however moving them with helicopters in a basket or sling on a cable is common. Although helicopters are very expensive, one nice **jade** boulder can be worth many thousands of dollars in rough form. Some **jade** is also mined from hard rock deposits, from ancient conglomerates associated with **ophiolite** exposures. Ophiolites are the metamorphosed fragments of ancient sea floor, exposed at the surface by faulting or uplift. Resistant **Jade** boulders are naturally separated from easily-weathered ophiolite rock and concentrated in conglomerates. They are extracted in both surface and underground mines. Geographically, much of the world's **jade** is found around the rim of the Pacific Ocean, where subduction transports large slabs of oceanic lithosphere beneath continents and volcanic island arcs. This accounts for much of the **jade** found in South America, Central America, the United States, Canada, eastern Asia, and New Zealand. Perhaps the most attractive and valuable **jade** found in the United States is from the area around Jeffrey City and Crooks Gap in Wyoming. There, **nephrite jade** is found by prospecting alluvial sediments, looking for **jade** in stream-rounded pebble- to boulder-size pieces.

Modified from <http://geology.com/gemstones/jade/>

## The Earth Has a Second Moon

Turns out the Earth has had a second, “mini-moon” for over a century, and it looks like our new little neighbor will stay around for centuries to come. This newly discovered moon is much smaller than our old moon and goes around the Earth in an astonishingly irregular orbit. This second, “Quasi-Moon” is actually an asteroid called **2016 HO3**, and it has been locked into “a little dance” with Earth for over a century now. Researchers first discovered **2016 HO3** in April, 2016, with the Pan-STARRS 1 asteroid survey telescope on Haleakala, Hawaii. That telescope is funded by the “Planetary Defense Coordination Office,” which tracks near-Earth objects. It is between 120 and 300 feet in diameter. Its orbit is extremely elliptical, ranging between 38 and 100 times the distance of Earth’s primary moon, and it bobs up and down across Earth’s orbital plane. This new moon’s orbit is tilted by about 8° and it orbits the Sun for 365.93 days, which is a little longer than Earth’s 365.24 day-long year. Since it’s tilted and has an elliptical orbit, sometimes it is quite closer to the Sun and moving a little faster than Earth. Other times, it is a



[Click on picture for video of new moon’s orbit.](#)

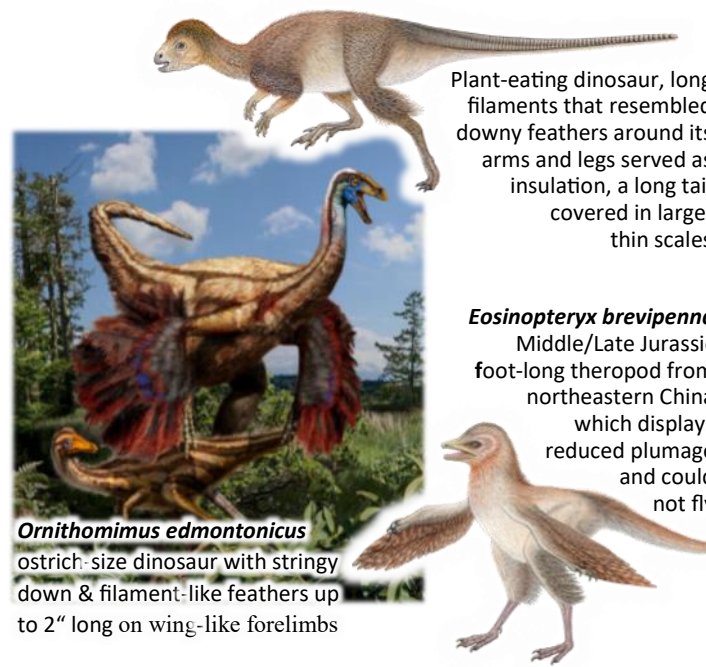
little bit farther out and moving a bit more slowly, however it never gets any closer than about 9 million miles from Earth or farther than about 25 million miles. Since this mini-moon is going to be hanging around for a while, I think we should consider giving it a better name than **2016 HO3**. Agree?

<http://www.physics-astronomy.com/2016/06/nasa-just-confirmed-that-earth-has-new.html#.WeakQmZDGMh>

## Some Feathered Dinosaurs



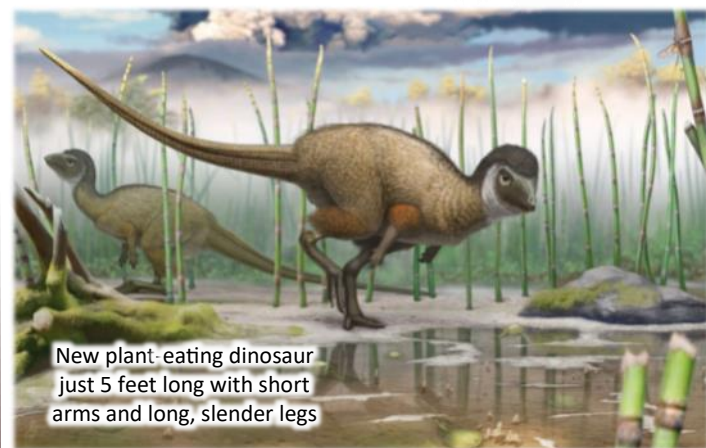
**Changyuraptor yangi**  
125-million-year old dinosaur from China with feathers on its arms and legs, looking as if it had two pairs of wings



Plant-eating dinosaur, long filaments that resembled downy feathers around its arms and legs served as insulation, a long tail covered in large, thin scales

**Eosinopteryx brevipenna**  
Middle/Late Jurassic foot-long theropod from northeastern China which displays reduced plumage and could not fly

**Ornithomimus edmontonicus**  
ostrich-size dinosaur with stringy down & filament-like feathers up to 2” long on wing-like forelimbs



New plant-eating dinosaur just 5 feet long with short arms and long, slender legs

<https://www.livescience.com/46989-feathered-dinosaurs-images.html>

# Visitor from Deep Space

Our Solar System has just been visited by a traveler from Deep Space. First thought to be a comet and named **C/2017 U1 (PANSTARRS)**, it was discovered on a highly hyperbolic orbit by Robert Weryk from observations made by the Pan-STARRS telescope in Hawaii on October 19, 2017 when it was 0.2 AU (19,000,000 mi) from Earth. The object was re-classified as an asteroid and renamed **A/2017 U1** a week later, and is now thought to be an interstellar object passing

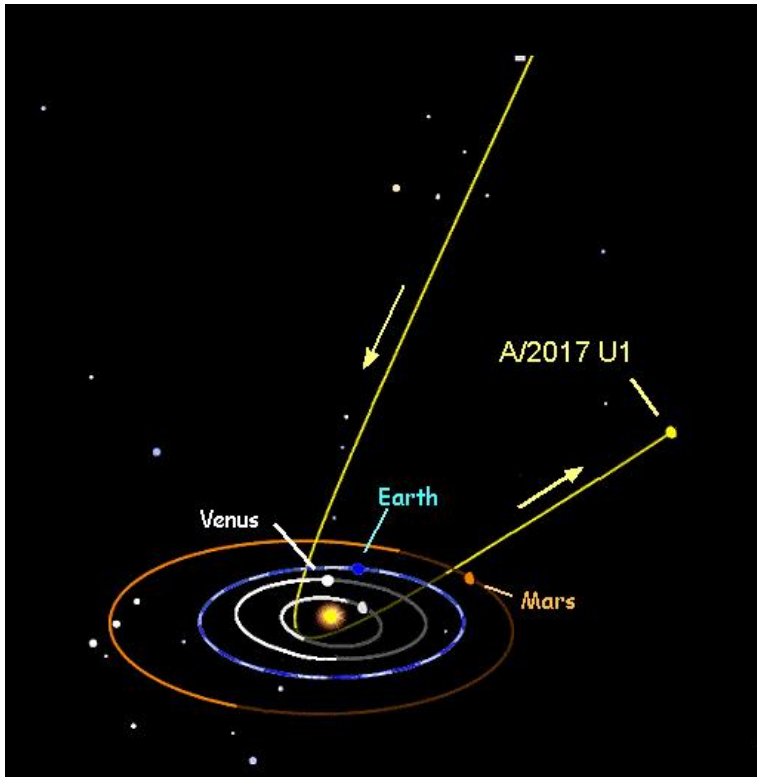


Illustration of the encounter of extraterrestrial asteroid A/2017 U1 with the Solar System.

[\(click on image to see animation\)](#)

through the Solar System. Based on two weeks of observations, 2017 U1's orbital eccentricity is  $1.195 \pm 0.001$ , the highest of any object yet observed in the Solar System. The high eccentricity of 2017 U1 both inbound and outbound indicates that it has never been gravitationally bound to the Solar System and is presumably an interstellar object. This is most likely the **first known example of an interstellar object**, appearing to come from roughly the direction of the star Vega in the constellation Lyra, with a hyperbolic excess velocity of 26 km/s with respect to the Sun. This direction is close to the Solar apex, the most likely direction of approaches for objects outside the Solar System. But it is unknown how long the object has been drifting among the stars in the galactic disc. On October 25, six days after its discovery, a study of very deep stacked images taken at the Very Large Telescope (VLT) in northern Chile found that the object showed no indication whatsoever of a coma (the nebulous envelope around the nucleus of a comet that forms when the comet passes close to the Sun). Accordingly, the object was renamed A/2017 U1, becoming the first comet to ever be re-designated as an asteroid. Additionally, the lack of a coma indicates that it must have been in the inner region of its original stellar system long enough for all its ice to

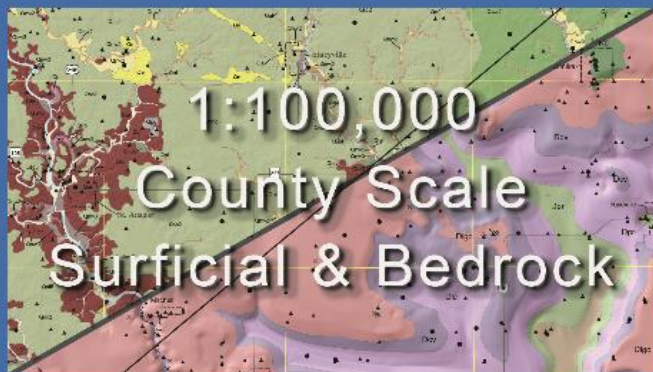
sublime. Assuming it is a rock with an albedo of 10%, it would be roughly 500 feet in diameter. Spectra recorded by the 4.2 meter William Herschel Telescope on the island of La Palma in the Canary Islands on October 25 showed the object was colored red like Kuiper belt objects. Extrapolating the orbit backwards, the asteroid is calculated to have gone through perihelion (closest to the Sun) on September 9, 2017 and to have passed approximately 0.161 AU (15,000,000 mi) from Earth on October 14, 2017. One hundred years ago, the object was roughly 559 AU (52 billion mi) from the Sun and traveling at 5,800 mi/hr with respect to the Sun. The object continued to speed up until it went through perihelion where it peaked at about 200,000 mi/hr. By the discovery date it had slowed down to 103,000 mi/hr, and it will continue to slow down until it reaches an interstellar cruising speed of about 100,000 mi/hr. This interstellar speed is within  $\sim 10,000$  mi/hr of other stars within the Sun's stellar neighborhood, which also suggests an interstellar origin. The object will ultimately head away from the sun at an angle of  $66^\circ$  from the direction it came from. As it leaves the Solar System, it will be near R.A. 23h51m and declination  $+24^\circ$ , in Pegasus.

<http://www.news.com.au/technology/science/space/everything-about-this-space-object-appears-odd-is-it-a-visitor-from-nearby-star-vega/news-story/941f3fb9f391e5b6e3aa521546143ff7#.jklk3>

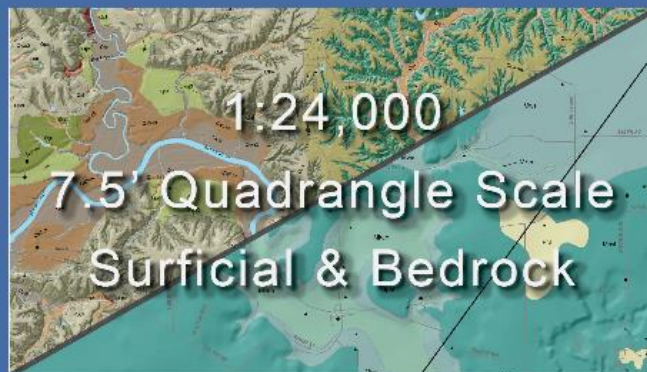
## What's New In Iowa Geology ??

The IGS Interactive Maps page is now available!

<https://www.iuhr.uiowa.edu/igs/publications/map/>



County Surficial and Bedrock



Quadrangle Surficial and Bedrock



Aquifer



Landscapes

The Iowa Geological Survey has launched a new service to make it easier to find and download Iowa maps and related information. The new [IGS Interactive Map Page](#) provides links to available maps and related digital data by selecting the location of interest from an Iowa base map and choosing the desired document from a drop-down box. The page currently offers links to their new, digital 1:100,000 county-scale Surficial & Bedrock maps, 1:24,000 quadrangle-scale Surficial & Bedrock maps, information on various bedrock aquifers, and links to Landform information in Iowa. The Survey plans to expand the number of publications that can be accessed through interactive maps, and is interested in hearing comments and suggestions from users. Please contact [Stephanie Tassier-Surine](#) at the Iowa Geological Survey with your comments (319) 335-3679.



## Ancient Winged Terror Was One of the Largest Animals to Fly

A new pterosaur found in Mongolia had a 32-foot wingspan and likely feasted on baby dinosaurs



The fragmentary fossil of a truly enormous pterosaur has been found in the Gobi Desert of Mongolia. This formidable predator may have had a wingspan of 36 feet, close to the size a small aircraft and rivalling the largest winged reptiles known from Europe and North America. The newly found giant lived 70 million years ago in a warm, inland habitat that was arid but not quite as dry as today. This late Cretaceous landscape was replete with dinosaurs, and their babies might have made ideal food for the huge carnivore, which could walk well on all fours and probably stalked its prey on the ground. Part of a mysterious group known as the **azhdarchids**, the animal was probably one of the largest pterosaurs that ever lived, and its discovery was reported in the *Journal of Vertebrate Paleontology*. The creature compares to the two largest pterosaurs currently known: *Quetzalcoatlus*,

found in Texas in the 1970s, and *Hatzegopteryx*, a stockier azhdarchid with a shorter neck found in Romania in the 1990s. Both of these pterosaurs had estimated wingspans of 32 to 36 feet. On the ground, they may have stood 18 feet high—about as tall as a large bull giraffe. There's even a chance that the newfound animal was larger than these previously known winged behemoths. The Mongolian fossil, a new species, has not yet been named as its remains are so incomplete. However, the fragmentary specimen represents the first pterosaur of its size found in that part of the world. Palaeontologists discovered the fossil in 2006 at a fossil-rich locality known as Gurilin Tsav in the bleak, treeless expanse of the western Gobi. The first bones discovered, vertebra, and taken to be identified were immediately recognized as a gigantic size pterosaur, and scientists immediately returned to the site and discovered more of the specimen. Many of the fossil bones were so broken that they couldn't be recognized at first. After years of "puzzle work" several backbones with the characteristic shape of vertebrae from azhdarchid pterosaurs were reconstructed. One of the neck bones from a giant Jordanian azhdarchid called *Arambourgiania* measure just over two inches wide, while the same bone in the new Gobi pterosaur is nearly eight inches across. Scientists suspect that this equates to a totally new size class of pterosaur that may have been a little heftier in overall weight, but would still have had wingspans in the 32- to 36-foot range, as that is approaching the size limit for flight in a pterosaur of that kind. This robust, formidable predator" was probably capable of taking human-size prey. Paleontologists speculated that the animals may have fed on things on the ground and were generalist in their ability to grab basically whatever they could fit in their beaks. The Gobi azhdarchid would not have been an apex predator, as was *Hatzegopteryx* in late Cretaceous Romania, because the new azhdarchid lived alongside *Tarbosaurus*, a relative of *T. rex* that weighed at least 5.5 tons. Luckily for the winged giant, it probably was not on the tyrannosaur menu, because scientists think the azhdarchids could have catapulted themselves skyward from a standing start in a matter of seconds, and there were probably easier prey for the *Tarbosaurus* to catch.



<https://news.nationalgeographic.com/2017/10/new-pterosaur-found-mongolia-largest-fossils-science/>

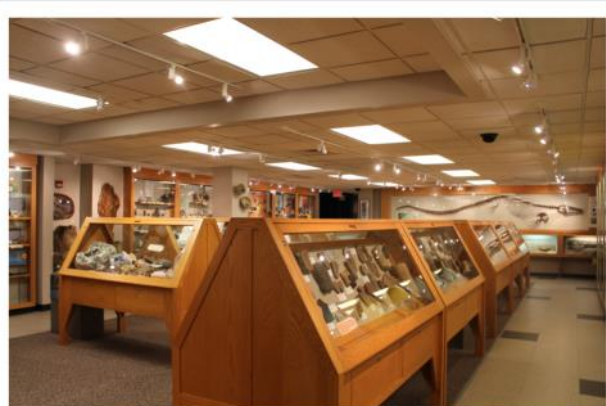
## CVRMS FIELD TRIP TO FRYXELL GEOLOGY MUSEUM AND LIZZADRO MUSEUM OF LAPIDARY ARTS



1.



2.



3.



4.

On **Saturday October 21st** CVRMS members traveled to the **Fryxell Geology Museum** in Rock Island and **Lizzadro Museum of Lapidary Art** in Elmhurst, Illinois. The 29 lucky participants on the Society's second (and what may become, Annual) Fall Field Trip found the two museums to be unexpected treasures, especially for those who had not visited them before. The Fryxell includes a wonderful display of fossils, rocks, and minerals, many collected from the Midwest, and specimens from all over the world. The Lizzadro also displays many beautiful specimens of rocks and minerals, but specializes in absolutely spectacular examples of what an artist can create from beautiful rocks and minerals. Jade is their specialty, but rock crystal, agate, malachite, ivory, and even cinnabar have been sculpted. The pictures on this and the following page were taken by **Marv Houg** and **Bill Desmarais**. Zoom in on them and enjoy these treasures again, or for the first time.

### IMAGE CAPTIONS (photos by Bill and Marv)

1. *Cryolophosaurus* from Antarctica Jurassic
2. Fryxell Museum entrance display
3. Fryxell Museum looking to back of museum
4. Fryxell Museum "big bones" display
5. Lizzadro Museum Jewelry Box in the park
6. Lizzadro Museum main floor
7. Carved malachite and gold goblets
8. Statue carved in red coral
9. Castle Lizzadro, gold with diamonds on agate
10. Cinnabar screen with gem & agate figures
11. Statue carved in violet and green jade
12. Cinnabar and malachite box
13. Ivory—24 nested spheres sculpted on pedestal



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11. see previous page for photo captions  
12.  
13.



## 2017 Officers, Directors, and Committee Chairs

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Club meetings are held the 3rd Tuesday of each month from September through November and from January through May at 7:00 p.m., temporarily at a location to be announced. The December meeting is a Christmas dinner held near the usual meeting night. June, July, and August meetings are potlucks held at 6:30 p.m. at area parks on the 3rd Tuesday of each month.

### CEDAR VALLEY ROCKS & MINERAL SOCIETY

CVRMS was organized for the purpose of studying the sciences of mineralogy, geology, and paleontology and the arts of lapidary and gemology. We are members of the Midwest (MWF) and American (AFMS) Federations. Membership is open to anyone who professes an interest in rocks and minerals.

**Annual dues are \$15.00 per family per calendar year. Dues can be sent to:**

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