

# The Mineral Minutes



Volume 77-02  
February 2019

## "Goodyear Meets the Mad Hatter"

Innovative composite saxophone mouthpieces of the 1920's and their effect on the growth of jazz

Our presenter for February is Tim Rose, a renowned scientist at the Mineral Sciences Department of the National Museum of Natural History, where he manages Analytical Laboratories. Tim is a sponsor of our club from the Smithsonian, so he is the one responsible for our welcoming and comfortable home at the Natural History museum.



Tim's presentation will take us back to the Roaring Twenties. The invention of semi-synthetic and synthetic plastics has changed daily life around the world. In the early 20th century, these new materials combined with the electrification of America and good old American ingenuity. This study focuses on composite saxophone mouthpieces and the Great American

Saxophone Craze of the 1920's. Analysis of mineral additives to the hard rubber of the mouthpieces reveals some very interesting, perhaps frightening facts. Waterloo and murder, elephants and goofy math, poison and theatrics, jazz and Elvis – prepare for anything at this exciting presentation. This is a very fun historical materials science talk that really does have some very important mineralogy in it.

Please join us in taking Tim to dinner on February 6th at 6:00 pm at the Elephant and Castle at 1201 Pennsylvania Avenue, NW. If you cannot make it to dinner, please go directly to the lobby of the Natural History museum (Constitution Avenue entrance) at 7:30 pm. We will head upstairs to the meeting room at 7:45 pm.



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### Prez Says..

by **Dave Hennessey**  
**MSDC Club President**

Thanks to everyone for stepping up to make our January meeting a success despite the partial government shutdown that closed our usual Smithsonian National Museum of Natural History (NMNH) meeting site. Many thanks to

# MSDC's January 2nd Business Meeting Report

By Andy Thompson, MSDC Secretary

Newly elected President Dave Hennessey welcomed everyone to the first program of 2019 and gave a special “thank you” to Board Member Dan Teich for providing a comfortable space for this year’s first meeting. In light of the government’s closing of the Smithsonian National Museum of Natural History, Dan offered his District Veterinary Hospital in S.E. DC, near Eastern Market.

Also, for the first time, MSDC’s current president added Dave Nanney to the list of former club presidents attending the meeting and thanked him and others for their service. Dave Hennessey then welcomed and invited two



Dan Teich for letting us use the large lobby of his veterinary practice for the meeting and for suggesting that we have our pre-meeting dinner at nearby Tunncliffe’s Tavern. The food was good and fully half of the meeting attendees made it to the dinner beforehand. And thanks to the Fishers for providing us with a projector, to John Weidner for providing a screen, and to Casper Voogt for the terrific presentation that made me wish I had been along on his trip to Namibia and come home with all the incredible aquamarine and schorl specimens that he brought in to show us.

As I am writing this, an announcement has been made that government will be reopened through mid-February, so it looks like we can meet on February 6th at the NMNH, have dinner beforehand at Elephant and Castle as usual, and keep our fingers crossed that the shutdown is over for good.

I’m looking forward to this month’s presentation, from our club sponsor, Timothy Rose. Due to his expertise with the mineralogical laboratory equipment, Tim often gets drawn into intriguing research that provides insights and informs the studies of his fellow scientists. His presentation this month involves a surprising area of study in which mineralogy plays an interesting part.

For “Sharing Time” this month, since our presentation does not feature a particular mineral species or location, I invite everyone to bring along any minerals they would enjoy talking about with the group. Bring whatever fascinates you or what you think other club members will find interesting.

I look forward to seeing everyone on February 6th.

guests, Alex and Karen, to share what interested them about minerals or drew them to the evening's presentation. Dave reviewed the 2019 entire list of elected club officers and included non-elected services provided by volunteers including Casper Voogt and Betty Thompson for co-managing the web page and Amanda Parker for serving as newsletter editor and stepping in to replace Steve Johnson.

Treasurer John Weidner then reported on the prior year's income and expenses. He noted that the annual membership dues (\$25 family & \$20 individuals) basically covered the club's regular operating expenses. The two extraordinary expense items, donations to the Smithsonian Mineral Department and to a graduate student's research, have been drawing down the club's reserve funds which will expire in just a few years. He also noted that the funds which enabled MSDC to start and continue supporting these two endeavors have come from prior and recent members' donations. He also alerted everyone that scammers continue to send MSDC fake



invoices for services and goods never provided. Members voted to unanimously accept John's report as delivered.

Dave then thanked Amanda Parker, MSDC's new Mineral Minutes editor, for getting out her first monthly bulletin. He asked if there were any corrections to the December Business Minutes. In the absence of any needed changes, the attendees voted to accept the Business Minutes as published.

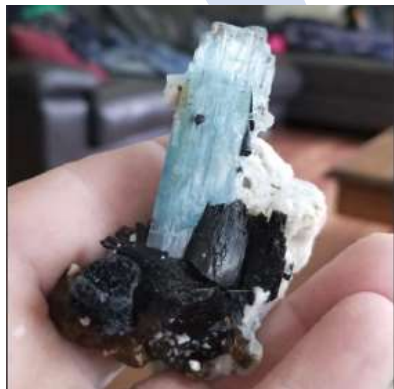
The final agenda item was the monthly "Geology in the News." Discussion yielded reports on the NASA New Horizons space craft recent flyby of Ultima Thule. As an object in the Kuiper Belt, 4 billion miles from earth, it is the farthest object ever probed by a flyby craft. Future data analyses promise to help scientists unpack some of the mysteries surrounding the origin of our planetary system. Members described the shape of Ultima Thule variously as a snowman and bowling pin covered with an unknown red-ice-like substance. In other news, attendees brought up the late December volcanic eruptions of Mt. Etna in Sicily and Krakatoa off the coast of Indonesia, as well as the very recent earthquakes near Anchorage, Alaska and Kamchatsky, Russia.

Having concluded the business of the club, Dave called for and received a motion to close the January business meeting, which motion was offered, seconded and unanimously approved.

# Program Report for January 2019: Casper Voogt's Field Trip to Namibia

By Andy Thompson, MSDC Secretary

**D**ave Hennessey, standing in for our club's absent V. P. for Programs, Yury Kalish, our club's V.P., introduced Casper Voogt, the evening's presenter, the club's website host and intrepid international mineral hunter. Following up on last year's trip to Madagascar, off Africa's east coast, his most recent trip was to Namibia, on the west coast, exploring the countries



legendary aqua mines, wild life and beautiful southern hemisphere stars. As usual with Casper, yes it was about the minerals but also about the culture and the old and new mineral collecting friends he encountered along the way.

For two weeks in April of 2018, Casper's team of seven mineral hunters drove the unpaved roads between at least seven distinct mining areas before returning to the expedition's starting point, Windhoek. Casper provided a geological overview of the country, noting that the landscape



includes rocks of the Archean age (3,900 million to 2,500 million years ago) through to the Phanerozoic age (2,500 million to 540 million years ago), "covering more than 2,600 million years of earth history."

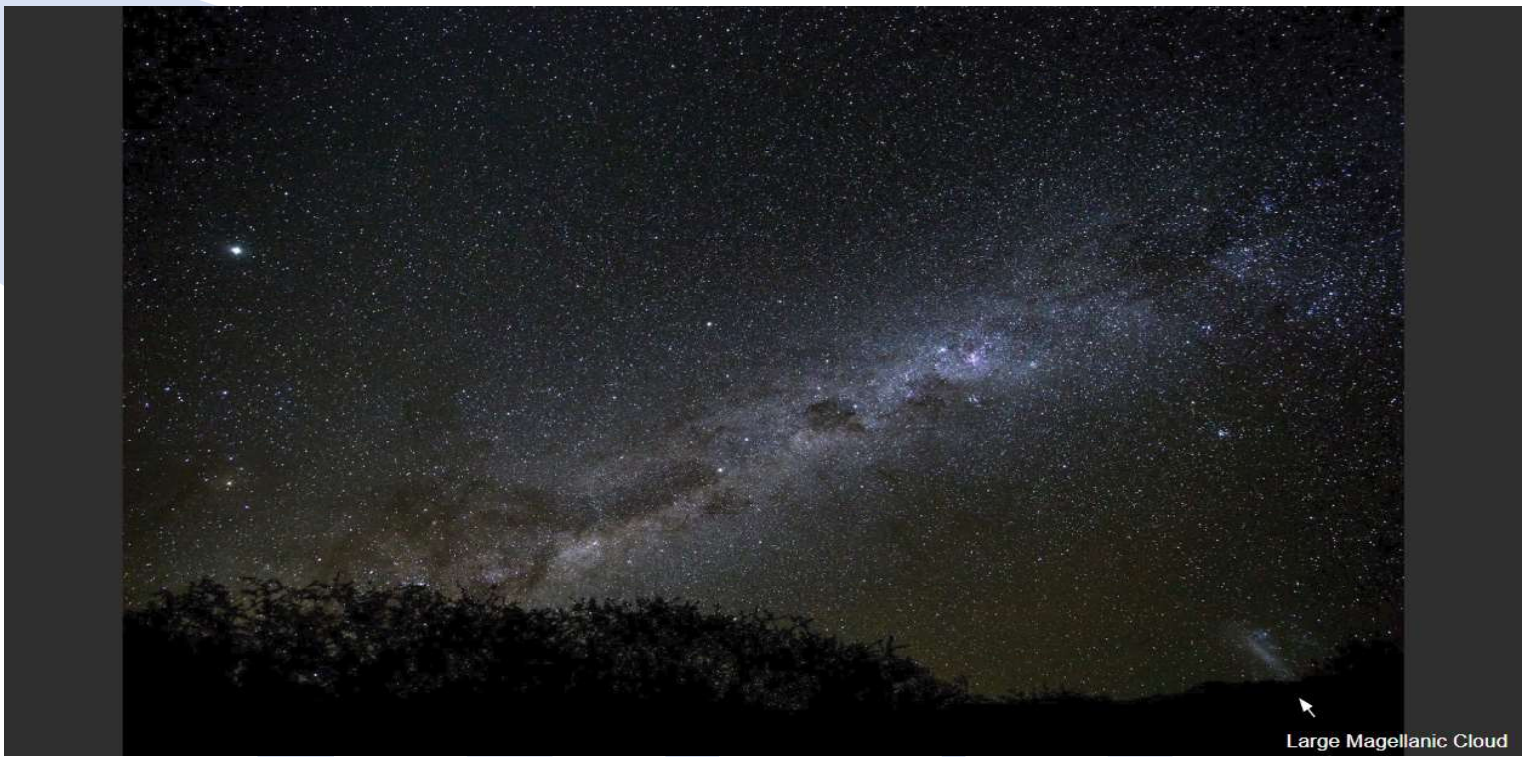
Today, nearly half of the country's surface area is exposed bedrock with the ancient Kalahari and Namib deserts making up the remainder.

The cultural history of Namibia dates back thousands of years as documented by rock paintings found throughout the country. Colonized by the Germans in the late 1800s through World War I, Namibia was then administered by South Africa until 1990 when the nation finally gained its independence. Its architecture and nomenclature show abundant evidence of its tribal, Dutch and German roots, including Tsumeb, Erango, Windhoek, Brandberg and Camp Aussicht.

While the trip was carefully planned to include seven distinct legs to diverse mining sites, Casper showed



pictures of the diverse zebras, cheetahs, elephants, lions, large weaver birds and more along the way. The trip's itinerary included roads paved only with cinder pebbles, very few gas stations, a flat tire, one of their vehicles getting stuck in sand, no ATM machines and being essentially off the electrical grid. On the plus side, far from the pollution from city lights, the southern hemisphere's perspective of the Milky Way stars was stunning. At night, the two faint Magellanic dwarf cloud nebulae captured everyone's attention given that these star clusters orbit along but outside the Milky Way galaxy and are not visible from the Earth's Northern Hemisphere.



Large Magellanic Cloud

Another of the highlights of the trip was encountering native miners walking home from their own mining expedition. They were willing to trade their uncleaned aqua and other specimens for modest amounts of local currency and even for “luxury” items such as a Swiss Army pocket knife, writing tablets, pens or pencils, all of which, for the local miners, were difficult to come by.



After cleaning:



Later, Casper used a weak solution of muriatic acid and other cleaners to carefully remove the limonite and siderite which cloaked the beautiful aqua minerals hidden beneath their rust-colored coating.

In addition to the aquamarine specimens, Casper brought back and showed the attending MSDC members a number of beautiful amethyst, quartz and copper minerals. The deep green diopside, for some, was the show-stopper. For others, it may have been Casper's tale of the abundance at one campground of one-inch long scorpions which

fluoresce a bright green, but were no threat to the hardy mineral hunters.

Dave Hennessey thanked Casper for sharing his very interesting geologic and cultural expedition and the appreciative audience applauded his extraordinary story.

Dave then invited any attendees who brought "show and tell" minerals to tell about their treasures. He called particular





## Club Information

Meetings are the First Wednesday of the Month (Jan-Jun and Sep-Dec). We meet in the lobby of the Smithsonian National Museum of Natural History at 7:45pm.

**Website** <http://mineralogicalsocietyofdc.org/>

**Facebook** [www.facebook.com/MineralogicalSocietyOfTheDistrictOfColumbia](http://www.facebook.com/MineralogicalSocietyOfTheDistrictOfColumbia)

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attention to a Namibian diopside specimen he displayed. Ken showed a number of his Namibian minerals and Dan displayed his “show and go” items which he was deaccessioning from his collection, including a self-collected copper specimen from “the oldest copper mine in the U.S. colony, the Schuyler mine near N. Arlington, NJ.” Dan encourages those who take home specimens to donate to the MSDC treasury.

Dave again thanked Casper for his presentation, Dan for providing the emergency space for the meeting, and all who shared their mineral specimens and snack food for the club’s post-meeting social gathering.

## November Program Synopsis:

### “Geological Setting of the World’s Best Carrolite Crystals”

Presented by Dr. Sharad Master (Synopsis by Club Secretary, Andy Thompson, with Dr. Master’s edits)

**We’ve all heard of gifts ‘out of the blue.’ But would you believe ‘out of Johannesburg, South Africa?’**

On Tuesday, Doctor Master left home in South Africa on his way to Mexico with a stop-over to visit a colleague in the Mineral Department of the Smithsonian. As an economic geologist, educator and avid mineral collector, he had read the Mineralogical Society of DC’s website and knew we were meeting on Wednesday evening. So in advance of his trip he volunteered to be our November presenter and share his knowledge about the

world-famous Central African Copperbelt.

The main focus of his presentation was the Kamoya Sud II mine in Katanga Province of the Democratic Republic of Congo (DRC), the nation previously known as Zaire. But the Kamoya Sud II mine is part of the world’s largest sedimentary copper district, which extends from Katanga Province into the adjacent region of Zambia, where it is known as the Zambian Copperbelt.

Most copper mines throughout the world were formed, Sharad said, neither by sedimentation, nor with the high concentrations of copper and the more expen-

sive cobalt. So that begs the question: what was it about the Kamoya Sud II mine's geological formation that resulted in this bonanza of metallic wealth? That question is one that Dr. Master has pursued and believes is worthy of further geological research.

### Geologic Formation of the Kamoya Sud II Mine

For decades, geologists have known this mining region was situated between two tectonic plates known as the Congo stable craton on the north and the Kalahari craton to the south. Although these two large blocks of the earth's crust have been stable for millions of years, 550 million years ago they were grinding together and braking up the in-between rock into breccia. In recent decades geologists conducted research which determined that after the plate collisions had ceased, only then did descending highly mineralized, copper and cobalt vertical veins develop in the region. It is the region between the cratons that constitutes the Kamoya Sud II and other mines. At a late stage in the

ceased crashing together, the veins remained undeformed and the metalliferous sediments remained intact. Other copper mining regions, however, formed earlier with the result that their rocks were crushed into smaller sizes and the copper and cobalt metals were less concentrated due to their disbursement.

Master illustrated more recent geological findings, including his own work examining borehole remains from one vein. He found evidence of intact concentrations of copper, cobalt and other minerals running from upper to lower layers. This helped confirm his view that hot fluids ran through those veins and deposited the metal crystals of carrollite,  $\text{CuCo}_2\text{S}_4$ . His examination found well-preserved cobalt crystals supporting his conclusion the draining fluids were cobalt-rich which concentrated and became the cobalt-rich deposits in the mine.

Dr. Master showed photographs of other mines including the Virgule open pit mine which contained considerable chrysocolla. But although

a copper mineral, as an aluminosilicate it was not readily able to be used as an ore of copper until recent technological breakthroughs. He also showed the Kamoto mine which has concentrations of bornite and chalcocite,  $\text{Cu}_2\text{S}$ , along with carbonates. Then he showed photos of the piece de resistance, the Tenke-Fungurume mining district which evoked audible gasps from the audience. Some of its outcrops appeared to be pure green and blue copper minerals. It was also interesting because it lacked any vegetation and so it is one of the first districts which could have been identified as a likely mining site from



Photo by Leon Hupperichs | Wikimedia Commons

deformation history, hydrothermal veins penetrated along fractures in the host rocks, depositing copper (chalcopyrite and bornite) and cobalt (carrollite) sulfides crystals enclosed in clear Iceland Spar calcite. Because this happened at a later stage in the region's geologic formation, after the cratons had

aerial photographs. Originally discovered in the first half of the 20th Century, that mine now extends over 580 square miles and is one of the world's largest known copper and cobalt resources. As an economic geologist, Dr. Master said his back-of-the-envelope calculation figured its value



was in the billions of dollars.

Historically, the DRC also has been a source for uranium which was mined extensively when the country, then known as Zaire, was a Belgian colony. Before World War II, the Belgian company Union Miniere had shipped tons of uranium to the USA for storage in New York City. Master said that resource was employed to help the United States build the atomic bomb dropped on Hiroshima. Also, uranium specimens were stored in the old Union Miniere's vault-like mineral museum, located at Likasi, in the Katanga Province of the Congo. As a result of the radiation, and the lack of ventilation, Master said, that mineral museum at the time of his visit was the most dangerous one in the world to visit.

Dr. Master also showed us several giant specimens he had obtained from the Kamoya Sud II mining region back in 2002. Specimens included carrollite and chalcopyrite, CuFeS<sub>2</sub>, both being heavy, shiny and about 7 cm across.

After fielding a few questions, the presentation concluded with extensive applause. Afterwards, in a one-on-one conversation he was asked why, given his current travel and having only slept for but a few hours on a plane, and traversing multiple time zones, why he volunteered to give a presentation lasting late into that Wednesday evening. With a smile he said: "This is something that I love so I can talk about it for hours."



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## THE MINERAL MINUTES

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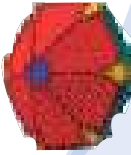




NEWSLETTER OF THE MINERALOGICAL SOCIETY OF THE DISTRICT OF COLUMBIA

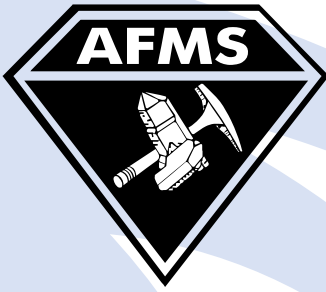
Mineralogical Society of DC

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## Useful Mineral Links:

	<p>American Federation of Mineralogical Societies (AFMS)</p>	<p><a href="http://www.amfed.org">www.amfed.org</a></p>
	<p>Eastern Federation of Mineralogical and Lapidary Societies (EFMLS)</p>	<p><a href="http://www.amfed.org/efmls">www.amfed.org/efmls</a></p>
	<p>MINDAT</p>	<p><a href="http://www.mindat.org">www.mindat.org</a></p>
	<p>Mineralogical Society of America (MSA)</p>	<p><a href="http://www.minoscam.org">www.minoscam.org</a></p>
	<p>Friends of Mineralogy</p>	<p><a href="http://www.friendsofmineralogy.org/">www.friendsofmineralogy.org/</a></p>
	<p>WebMineral</p>	<p><a href="http://webmineral.com">webmineral.com</a></p>
	<p>The Geological Society of America (GSA)</p>	<p><a href="http://www.geosociety.org/">www.geosociety.org/</a></p>
	<p>Jeff Scovil Mineral Photography (not advertising - just great photos)</p>	<p><a href="http://scovilphotography.com/">scovilphotography.com/</a></p>
	<p>United States Geological Survey (USGS)</p>	<p><a href="http://www.usgs.gov">www.usgs.gov</a></p>
	<p>The Geological Society of Washington (GSW)</p>	<p><a href="http://www.gswweb.org/">http://www.gswweb.org/</a></p>



# AFMS Code of Ethics



- I will respect both private and public property and will do no collecting on privately owned land without the owner's permission.
- I will keep informed on all laws, regulations of rules governing collecting on public lands and will observe them.
- I will to the best of my ability, ascertain the boundary lines of property on which I plan to collect.
- I will use no firearms or blasting material in collecting areas.
- I will cause no willful damage to property of any kind - fences, signs, and buildings.
- I will leave all gates as found.
- I will build fires in designated or safe places only and will be certain they are completely extinguished before leaving the area.
- I will discard no burning material - matches, cigarettes, etc.
- I will fill all excavation holes which may be dangerous to livestock. [Editor's Note/ Observation: I would also include wildlife as well as livestock.]
- I will not contaminate wells, creeks or other water supply.
- I will cause no willful damage to collecting material and will take home only what I can reasonably use.
- I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.
- I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.
- I will cooperate with field trip leaders and the se in designated authority in all collecting areas.
- I will report to my club or Federation officers, Bureau of Land management or other authorities, any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.
- I will appreciate and protect our heritage of natural resources.
- I will observe the "Golden Rule", will use "Good Outdoor Manners" and will at all times conduct myself in a manner which will add to the stature and Public "image" of rockhounds everywhere.

**MEMBERSHIP APPLICATION OR RENEWAL  
THE MINERALOGICAL SOCIETY OF THE DISTRICT OF COLUMBIA (MSDC)**

Family ~ \$25.00 per year. One address.

Individual ~ \$20.00 per year.

New \*  Renewal Dues are for Year \_\_\_\_\_ \*

For new members who join in the last months of the year, membership will extend through the following year with no additional dues.

**ANNUAL DUES – PLEASE PAY YOUR DUES PROMPTLY.**

Pay at next meeting or mail to:

Mineralogical Society of DC  
c/o John Weidner  
7099 Game Lord Drive  
Springfield, VA 22153-1312

Name(s) (First and Last) \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip: \_\_\_\_\_

Phone(s): Home/Work/Mobile \_\_\_\_\_

Email(s): \_\_\_\_\_

**OK TO INCLUDE YOU ON CLUB MEMBERSHIP LIST?**

Yes – Include name, address, phone, email.

If you want any information omitted from the membership list, please note:

Omit my:  Email;  Home phone;  Work phone;  Mobile phone;  Address;  Name

**SPECIAL CLUB-RELATED INTERESTS?** \_\_\_\_\_

**Meeting Dates, Time, and Location:** The first Wednesday of each month. (No meeting in July and August.) The National Museum of Natural History, Smithsonian Institution, 10th Street and Constitution Ave, Washington D.C. We will gather at the Constitution Avenue entrance at 7:45 PM to meet our guard who will escort us to the Cathy Kirby Room.