



Mid-TENN Gem'ers

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Newsletter of
The Middle Tennessee Gem
and Mineral Society, Inc.
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The Prez Rambles On...

My oldest daughter Beth and I had an enjoyable three day trip to Washington D.C. earlier this month. She had decided about six weeks ago that she wanted to see the Smithsonian museums, and asked me to go with her. It didn't take much arm twisting to get me to go as I have wanted to see the new Hall of Gems since it was remodeled a few years ago. Beth wanted mainly to see the modern art museums and the Holocaust Museum. With those two goals in mind we made plans to visit. Whether she would admit it or not, I think she enjoyed the gems and minerals almost as much as I did.

The Natural History museum is divided into several sections. In addition to the gems and minerals, there were fossils of all types, dinosaurs included, and artifacts from the different native people that have inhabited North America throughout history. We concentrated on the fossils, minerals and gems.

Going thru the hall that contained mostly minerals and meteorites, We were awed with the size and perfection of many of the specimens. In a lot of cases, there were rough minerals along with huge gemstones cut from the same mineral. For example there was a football size gemmy, almost flawless crystal of morganite. Beside it was a faceted morganite roughly the size of a doubled fist. Another impressive specimen was a tourmaline crystal the size of a one liter coke bottle, also very gemmy. One case held several eye popping opal pieces both rough and cut. This case has opals from the US, Australia, Mexico, Brazil, Canada, and Honduras. There was an crystal opal cab that was approximately 40 x 50 mm. The bold, bright colors were incredible.

They also had a large case of agates, mostly from Brazil and Mexico. I was disappointed there wasn't a big red paint rock agate in the center of the case. It really needed the strong bright color to complement the other agates. Maybe we should locate a killer piece and see if we could get them to add it to the permanent display. Another favorite was a pair of topaz crystals that weighed in at 111 pounds and 70 pounds. Displayed with the crystals was a huge faceted topaz weighing

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The MTG&MS, Inc. is a non-profit educational society dedicated to the study and enjoyment of the earth sciences. We are open to the public for the education of all who wish to attend. Society membership is open to persons interested in the earth sciences. Applications are available on request.

Meeting Dates for 2003

August 21st

September 18th

October 16th

November 20th

December 18th

Internet Web Page:

<http://www.mtgms.org>

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and more...

Dues

Dues are \$12.00 for the first person of each household and \$2.00 for each additional family member. Dues are payable January 1st and are prorated in April, July and October. Check the upper right hand corner of your address label for the year you are paid through.

Send dues to:

Will H. Smith
5304 Bellcrest Dr
Antioch, TN 37013

22,982.5 carats or 10.1 pounds. There is also a flawless quartz sphere that weighs 106.7 pounds. There is a pair of smoky citrine crystals that weighs 117 pounds. These two crystals are almost flawless.

The meteorites were something to behold. While there were lots of small whole and sliced meteorites, the most impressive was the open display of 8 to 10 big meteorites. I would guess the smallest probably weighed in at over 300 pounds, while the largest probably tipped the scales at over 1,500 pounds. Since they were the nickel iron they were extremely heavy for their size. Any of them would make a nice display or a base for a glass top coffee table.

The last part of the gem and mineral gallery was the gemstones and jewelry. This area was the most crowded as it houses probably the most famous diamond in the world, the Hope diamond. It is a beautiful sapphire blue diamond that weighs over 45 carats. There is a special diamond exhibit that contains 6 diamonds, the largest being a D-flawless 306 carat diamond. I think this is the largest flawless diamond ever cut. It's about the size of a walnut. The other diamonds while smaller, were no less dazzling as they were colored diamonds - green, blue, red, orange, and pink. The orange diamond was so strong, it would be a close match to the UT orange color. So dazzling it would make any orange blooded UT fan proud.

This area also contained some dazzling emeralds. On gemstone set in a necklace was an emerald cab about the size of half a goose egg. It is almost free of any inclusions. This one stone weighs 168 carats. Other gemstones included

huge sapphires, rubies, precious topaz, tourmaline, all types of quartz and many others. Many of the faceted stones are fist size or larger.

We also walked through the hall that contained several dinosaurs. On display was a T-Rex, a stegosaurus, a triceratops and one of the Huge dinosaurs whose name escapes me, although it may have been an allasaurus. Surrounding areas contained all sizes and types of other fossils. There were even a few shell fossils from Tennessee.

While going through the Hirshorn Art Museum, we came across a piece of art even a rockhound could love. In the middle of the floor of one of the gallery's was a 6 foot circle of nicely arranged flint nodules. I told my daughter I was going to fix one with some colorful agate and see if the museum would display my art. At least I would come up with something more colorful than plain old gray/black with white rind flint.

We also got a laugh from a piece of art that consisted of a rectangle of hazelnut pollen sprinkled on the floor of the gallery. Don't get me wrong some of the art was great. The great thing about art is you don't have to understand or look for a deep meaning to just enjoy it no matter how goofy it is.

That's all for now, I'll see you at the meeting.

Steve
shenegar@
net-serv.com



Update on Tullahoma

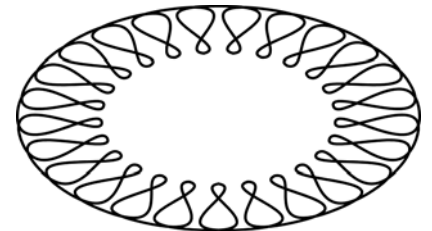
by Will Smith

I was in Tullahoma on Thursday before the big Auction and Yard Sale for the Lapidary Class. Many students were working to get ready for the big event. On Friday some were pricing, others were going out and collecting items and others were getting the room ready. Great stuff. Ken was watching.

I was not able to attend on Saturday, but Ken reported it was better than expected and most all the students worked hard all day. I understand all the hard work paid off with many sales and a great auction.

I was back down on Tuesday and Dick had the base for the storage building with the floor on it. My guess is that by end of next week the storage building will be complete. Then we can get started expanding the current Lapidary Room.

Ken and his students need to be congratulated for their work and



What's Next With Donelson?

by Will Smith

The dust has settled and the equipment is in place. Joe took a week off to attend the Show at Spruce Pines; Bill and French are completing their vacations; and, Al should be back in September. Bobby and Walt have been teaching this Summer giving some of us a little time off.

With the added space, we've got two new cab machines like the ones used at Tullahoma, some additional area for silversmith work, a faceting area with an anticipated 4 machines on loan, a kiln, an expected casting machine and supplies, along with many empty book shelves. If you have books you would like to give or loan, we've got a place for them.

Our idea at this point is to try to offer a number of new classes like additional night classes for lapidary, wire art, and silversmithing, maybe even something on Saturday or Sunday. With all the new equipment, we will need more of you with experience in these areas to volunteer to teach. We will try to provide you with more detail on classes offered along with their times. To help us plan, you may want to let us know what you would like to take along with the best time for you. Even if you do not want to take any classes, go by the Donelson Senior Citizens Center on Donelson Pike and see what your Club is doing.



Show Time is on it's way. *by Will Smith*

Guess your wondering if we're going to have a show this year. Well we are and it is getting time to start working on it. We've been trying to make a few changes to make it easier on everyone and a more successful show. We're using a booth layout based on available space. We are working to keep each dealer in their old space, but making it easier to deal with securing deal-

ers and setup. Also this year the Club area will not be the same as it was in the past. This year, a member can rent a table, but will have to go through the same process as other dealers and sign the same contract. This will assure that we continue to have a professional dealer space throughout the building. Steve is mailing the contracts this week. Feel free to contact him with any questions.

If your interested in helping with the Show, contact me at 473-6081 or whsinc@comcast.net. I'm always interested in your ideas or suggestions. We will have a meeting around the second week of September.

Your Prayers



One more by Will Smith

A very great person and active member of this Club is in a real battle at this time. Max Grimes has been very sick for sometime, but recently found new areas of concern. All of us need to pray that Max and Paula will make it through this challenge. I know that Max has the will and desire to do many more shows, but we need to let God know that many of us want to see him make it.

"Field Trip!"

The Southeast Federation of Mineralogical Societies, Inc
*The Friendly Federation -
Founded in 1976 to serve*

SFMS Field Trip Committee
DMC Field Trip Sharing Program

An Official Field Trip of the Aiken Gem, Mineral and Fossil Society
An Official Field Trip of the Middle Tennessee Gem & Mineral Society

8:30 am EST
Saturday
September 20, 2003

Graves Mountain Lincoln County, Georgia (FEE AREA)

What: Mineral Collecting Field Trip

Where: Graves Mountain, Lincoln County, Georgia

When: Saturday, September 20, 2003

Minerals: Rutile, Lazulite, Kyanite, Quartz, Pyrophyllite, Goethite/Hematite (iridescent), Pyrite, Muscovite (clear to green) and Ilmenite are some of the best known and most frequently found. Forty plus species are known from Graves Mountain, most being in micro size. Some of these that are found in crystal form are Barite, Cacoenite, Crandallite, Gypsum, Phosphosiderite, Strengite, Sulfur, Variscite, Wavellite and Woodhouseite.

Assembly Point: At 08:30 along west side of C.E.Norman Road at junction with Hwy 378.

From Washington, Georgia travel east on Hwy 378. From junction of Hwy 378/47/78/10/17 in Washington (at Lin's Wok Restaurant) it is approximately 10.5 miles to the Lincoln County line. C.E. Norman Road is about 100 yards ahead to the left.

From Lincolnton, GA (Hardees Restaurant) travel west on Hwy 378 approx. 5.5 miles to C.E.Norman Road to the right.

Lodging: The Cullars Inn adjacent to Hardees in Lincolnton. Rate \$44 plus tax for two persons. - Tel # (706) 359-6161

Jameson Inn (near the Hwy 378/47/78/10/17 junction) in Washington. Rate \$63.27 includes tax for two persons. - Tel # (706) 678-7925. Reservation can be made toll free thru 1-800-JAMESON.

Other lodging can be found in Thomson (20 miles) and off Bel Air Road and I-20 junction west of Augusta (35 miles).

Camping: Elijah Clark State Park - approximately 6 miles east of Lincolnton on Hwy 378. Reservations

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MARS by Mike Baldwin

It's finally here--the best appearance of the Red Planet any of us will ever see. On August 27, 2003 Mars comes closer to Earth than at any time in the past 50,000 years or more. It will appear as the brightest object in the southern sky [other than the moon]. Clear viewing of Martian planetary features requires stable air. Get away from the built-up daytime heat of houses, paved driveways, and stone patios. We have a perfect surface for setting up a telescope, barely radiates heat at all-- grass. Try to get away from the city and enjoy Mars this month.

The Red Planet

Mars is the fourth planet from the Sun and is commonly referred to as the Red Planet. The rocks, soil and sky have a red or pink hue. The distinct red color was observed by stargazers throughout history. It was given its name by the Romans in honor of their god of war. Other civilizations have had similar names. The ancient Egyptians named the planet *Her Descher* meaning the red one.

Before space exploration, Mars was considered the best candidate for harboring extraterrestrial life. Astronomers thought they saw straight lines crisscrossing its surface. This led to the popular belief that irrigation canals on the planet had been constructed by intelligent beings. In 1938, when Orson Welles broadcast a radio drama based on the science fiction classic *War of the Worlds* by H.G. Wells, enough people believed in the tale of invading Martians to cause a near panic.

Another reason for scientists to expect life on Mars had to do with the apparent seasonal color changes

on the planet's surface. This phenomenon led to speculation that conditions might support a bloom of Martian vegetation during the warmer months and cause plant life to become dormant during colder periods.

In July of 1965, Mariner 4, transmitted 22 close-up pictures of Mars. All that was revealed was a surface containing many craters and naturally occurring channels but no evidence of artificial canals or flowing water. Finally, in July and September 1976, Viking Landers 1 and 2 touched down on the surface of Mars. The three biology experiments aboard the landers discovered unexpected and enigmatic chemical activity in the Martian soil, but provided no clear evidence for the presence of living microorganisms in the soil near the landing sites. According to mission biologists, Mars is self-sterilizing. They believe the combination of solar ultraviolet radiation that saturates the surface, the extreme dryness of the soil and the oxidizing nature of the soil chemistry prevent the formation of living organisms in the Martian soil. The question of life on Mars at some time in the distant past remains open.

Other instruments found no sign of organic chemistry at either landing site, but they did provide a precise and definitive analysis of the composition of the Martian atmosphere and found previously undetected trace elements.

The Atmosphere of Mars

The atmosphere of Mars is quite different from that of Earth. It is composed primarily of carbon dioxide with small amounts of other gases. The six most common components of the atmosphere are:

Carbon Dioxide (CO₂)95.32%
 Nitrogen (N₂)2.7%
 Argon (Ar)1.6%
 Oxygen (O₂)0.13%
 Water (H₂O)0.03%
 Neon (Ne)0.00025 %

Martian air contains only about 1/1,000 as much water as our air, but even this small amount can condense out, forming clouds that ride high in the atmosphere or swirl around the slopes of towering volcanoes. Local patches of early morning fog can form in valleys. At the Viking Lander 2 site, a thin layer of water frost covered the ground each winter.

There is evidence that in the past a denser martian atmosphere may have allowed water to flow on the planet. Physical features closely resembling shorelines, gorges, riverbeds and islands suggest that great rivers once marked the planet.

Temperature and Pressure

The average recorded temperature on Mars is -63° C (-81° F) with a maximum temperature of 20° C (68° F) and a minimum of -140° C (-220° F). Barometric pressure varies at each landing site on a semiannual basis. Carbon dioxide, the major constituent of the atmosphere, freezes out to form an immense polar cap, alternately at each pole. The carbon dioxide forms a great cover of snow and then evaporates again with the coming of spring in each hemisphere. When the southern cap was largest, the mean daily pressure observed by Viking Lander 1 was as low as 6.8 millibars; at other times of the year it was as high as 9.0 millibars. The pressures at the Viking Lander 2 site were 7.3 and 10.8 millibars. In comparison, the average pressure of the Earth is 1000 millibars.

Reference: Mars; PlanetScapes; Solarviews.com; <http://solarviews.com/eng/mars.htm>; 08August 2003. Reprinted for educational purposes under the "fair use" provision of the U.S. Copyright Act.

Hubble's View of Mars

Credit: David Crisp and the WFPC2 Science Team (Jet Propulsion Laboratory/California Institute of Technology), and NASA

The sharpest view of Mars ever taken from Earth was obtained by the recently refurbished NASA Hubble Space Telescope (HST). This stunning portrait was taken with the HST Wide Field Planetary Camera-2 (WFPC2) on March 10, 1997, just before Mars opposition, when the red planet made one of its closest passes to the Earth (about 60 million miles or 100 million km).

At this distance, a single picture element (pixel) in WFPC2's Planetary Camera spans 13 miles (22 km) on the Martian surface.

The Martian north pole is at the top (near the center of the bright polar cap) and East is to the right. The center of the disk is at about 23 degrees north latitude, and the central longitude is near 305 degrees.

This view of Mars was taken on the last day of Martian spring in the northern hemisphere (just before summer solstice). It clearly shows familiar bright and dark markings known to astronomers for more than a century. The annual north polar carbon dioxide frost (dry ice) cap is rapidly sublimating (evaporating from solid to gas), revealing the much smaller permanent water ice cap, along with a few nearby detached regions of surface frost. The receding polar cap also reveals the dark, circular sea' of sand dunes that surrounds the north pole (Olympia Planitia).

Other prominent features in this hemisphere include Syrtis Major



Planitia, the large dark feature seen just below the center of the disk. The giant impact basin Hellas (near the bottom of the disk) is shrouded in bright water ice clouds. Water ice clouds also cover several great volcanoes in the Elysium region near the eastern edge of the planet (right). A diffuse water ice haze covers much of the Martian equatorial region as well.

The WFPC2 was used to monitor dust storm activity to support the Mars Pathfinder and Mars Global Surveyor Orbiter Missions, which are currently en route to Mars. Airborne dust is most easily seen in WFPC2's red and near-infrared images. Hubble's "weather report" from these images is invaluable for Mars Pathfinder, which is scheduled for a July 4 landing. Fortunately, these images show no evidence for large-scale dust storm activity, which plagued a previous Mars mission in the early 1970s.

The WFPC2 was used to observe Mars in nine different colors spanning the ultraviolet to the near infrared. The specific colors were chosen to clearly discriminate between airborne dust, ice clouds, and prominent Martian surface features. This picture was created by combining images taken in blue (433 nm),

green (554 nm), and red (763 nm) colored filters.



Field Trip - cont'd from page 3

(770) 389-7275 or 1-800-864-7275.
Park Office - (706) 359-3458

Equipment: Any or all of the following. Some sort of transport vehicle(cart), buckets, 8lb sledge, 2-4 lb crack hammer, rock hammer, pry bar, shovel, chisels, SAFETY EYEWEAR, magnifier, back pack w/egg cartons and/or wrapping material. Hard hat required if you plan to work adjacent to the high wall areas.

Entry Fee: \$5.00 per person(bring correct amount).

Will be collected as Letter Agreement and Release form is filled out.

Weather: All day rain and/or thunderstorms will cause cancellation of this event.

Local weather data for Lincolnton can be obtained at:

www.weather.com/weather/local/30817

Food and Drinks: None available at Graves Mountain. Bring what you need for the day.

Age Limit: Children 12 years and older can participate but must be supervised by their parent or guardian.

Pets: Allowed but must be kept under control by owner.

Contact: Don Reems if you have questions pertaining to the field trip. Tel: (706) 860-6406 E-Mail: Don Reems@aol.com

Mail Address: 714 Faircloth Ct., Evans, GA, 30809

Safety: Follow guidelines set down by DMC and your individual club. Don't endanger yourself or others around you.....

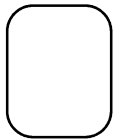


Forwarding and Address Correction Requested

Next Meeting:
August 21st
6500 miles
from Petoskey
stones to
Dinosaur Bones
by Bob King



First Class
Postage



Middle Tennessee Gem and Mineral Society, Inc.
c/o 2510 Essex Pl
Nashville, Tennessee 37212

The Interior of Mars

by Mike Baldwin

What we currently know about the interior of Mars suggests that it can be modeled with a thin crust, similar to Earth's, a mantle and a core. Using four parameters, the Martian core size and mass can be determined. However, only three out of the four are known and include the total mass, size of Mars, and the moment of inertia. Mass and size was determined accurately from early missions. The moment of inertia was determined from Viking lander and Pathfinder Doppler data, by measuring the precession rate of Mars. The fourth parameter, needed to complete the interior model, will be obtained from future spacecraft missions. With the three known parameters, our model of Mars is limited. If the Martian core is dense (composed of iron) similar to Earth's or meteorites thought to originate from Mars, then the minimum core radius would be about 1300 kilometers. If the core is made out of less-dense material such as a mixture of sulfur and iron, the maximum radius would probably be less than 2000 kilometers.

Swap and Shop

For Sale: Now available for sale! Large garage stuffed full of 35 yrs of rock collecting. Rocks of all types from fossils, specimens, to slabs are priced individually. Large selection of yard rocks still available priced by the pound. Petrified wood and quartz \$1/lb, other rocks \$.50/lb. Call Francis Mangrum to setup a time to visit (615) 228-8577.

For Sale: Rough Rock \$1.00/lb - 100 lbs. for \$85.00. Your pick, Jasper, Agates, Tampa Bay Coral, etc. June Miller (931) 598-9740.

For Sale: Cab makers. Cab Mate, sanding belts & disk, tumbling grit & polish, sphere machines, grinding wheels, flat lap machines, and a whole lot more at low prices. Call for info. George Jones (615) 333-3781) 5025 Franklin Rd, email georgejones@comcast.net

For Sale: Rock for sale - Outside rock except petrified wood and quartz \$.50/lb. Petrified wood and quartz-\$1/lb. Call Frances Mangrum to set up a time to visit. (615) 228-8577.

Swap and Shop is for members and friends to advertise goods and services for sale or swap & want ads.