MEMPHIS ARCHEOLOGICAL AND GEOLOGICAL SOCIETY

Memphis Archaeological and Geological Society

Article Ideas!

If you have an interesting idea for an article, let the editor know and we'll get it done!

Help Needed

We need your help! Please see article on Page 2 and Special Requests here.

In This Issue:

Credit: Brian Chilson/Arkansas Times

July Member Meeting Presentation

Archaeological Research at the Ohlendorf Site, Mississippi County, Arkansas

Mitchell R. Childress

This presentation will detail some of the findings from work done with another MAGS member, Drew Buchner, at a small site from the same time period as Lilbourn and Spiro (A.D. 1000–1500). Ohlendorf is a small but very high-density archaeological site near Wilson in Mississippi County, Arkansas. During the time of occupation, it was one of a number of earthwork and village sites that was part of the Late Mississippian Nodena phase.

For more information check out this link: Field Columbia.

Help Needed

We need help with the following positions to either lead or be a collaborator with the area lead in making our society the best it can be for you. If you can spare some time each month, please volunteer in the area that you most connect with:

Director - Rock Swap
Director - Assistant Field Trips
Director - Assistant Adult Programs
Directors - Librarian/Historian and Assistant Librarian
Webmaster

To learn more, email Christine Anderson

MAGS AND FEDERATION NOTES

Memphis Archaeological and Geological Society, Memphis, Tennessee

The objectives of this society shall be as set out in the Charter of Incorporation issued by the State of Tennessee on September 29, 1958, as follows: for the purpose of promoting an active interest in the geological finds and data by scientific methods; to offer possible assistance to any archaeologist or geologist in the general area covered by the work and purposes of this society; to discourage commercialization of archaeology and work to its elimination and to assist in the younger members of the society; to publicize and create further public interest in the archaeological and geological field in the general area of the Mid-South and conduct means of displaying, publishing and conducting public forums for scientific and educational purposes.

MAGS Membership Meetings are at 7:00 P. M. on the second Friday of each month May-October, and 10:00 Am on the 2nd Saturday of each month November-April. The meetings are held in the Fellowship Hall of Shady Grove Presbyterian Church, 5530 Shady Grove Road, Memphis, Tennessee.

MAGS Website: memphisgeology.com

MAGS Show Website: https://earthwideopen.wixsite.com/rocks

Please contribute articles or pictures on any subject of interest to Rock Stars like you. Send me a note (David Kitkowski) and let's collaborate!

Go to https://www.southeastfed.org/sfms-field-trips/dmc-field-trip-program for the DMC field trip schedule and other information.

Links to Federation News

AFMS: www.amfed.org

SFMS: https://www.southeastfed.org/

2025 MAGS Board

President– Open
1st VP (Field Trips)– Charles Hill
(901) 626-4232 ◊ hunter3006@aol.com
2nd VP (Adult Programs)– Christine Anderson
(901) 201-8011 ◊ catclaus79@yahoo.com
Secretary– Josh Anderson
(727) 252-4344 ◊ wadijosh@gmail.com
Treasurer– Bonnie Cooper
(901) 288-4797 ◊ rocks4us@hotmail.com
Director (Youth Programs)– Jane Coop
(901) 494-7890 ◊ dogsandrocks3@gmail.com
Director (Asst. Field Trips)– Open
Director (Librarian)– Open
Director (Membership Services)– Bob Cooper
(901) 288-4797 ◊ rocks4us@hotmail.com
Director (Historian)– Open
Show Chairman– Josh Anderson
(727) 252-4344 ◊ wadijosh@gmail.com
Newsletter Editor– David Kitkowski
(901) 233-5685 ◊ davidkitkowski@yahoo.com
Past President– Charles Hill

Field Trips

Charles Hill
Field Trip Director

July Trip - Sweet Surrender Crystal Mine

Hello, Magsters. Are you ready for an adventure at a new site? We are going to Arkansas on July 19th. We will be visiting a mine I've never been to - the Sweet Surrender Crystal Mine. In addition to clear quartz, you can find very rare iridescent quartz there, as well as smokey quartz and other minerals, including both fluorite and agate.

The mine is in Story, Arkansas, about 11 miles north of Mount Ida. The entry fee is $30.00 per person. However, if we can get 25 people or more, we will get a $5.00 discount per person. For hardcore rockhounds, there is hard rock mining at this site. You will be allowed to go the rock face to search for and dig out crystal pockets. For people who can't or don't want to work that hard, there are many piles of tailings containing lots of nice crystals.

This is a primitive site with only porta potties and picnic tables. Bring whatever food and beverages you want to consume. Tools needed for hardcore mining include a heavy hammer, a rock hammer, chisels, and a heavy pry. Everyone else will need a rock hammer, a hand rake, a small pry, and something to put crystals in. Choose clothing that you can afford to part with because the clay at this mine is bright red and will permanently stain your clothes. Don't forget bug spray and suntan lotion.

There will be a signup sheet at the next members meeting with instructions on how to get to the mine. For those who are unable to attend the meeting, I can send you the instructions via text at (901) 626-4232 or e-mail at hunter3006@aol.com.

August Rock Swap Announcement

The August Rock Swap is a great event to update your rock knowledge with other members, upgrade your personal collection and share (sell) items you would like others to enjoy. There will be a pot luck so bring your favorite dish or dessert to share!

Crystal Corner

David Kitkowski

We run on crystals. Yes, much like the stories of Atlantis, crystals play a role in almost every aspect of our societies, cultures, and personal lives. Think about how many times a day you come in contact with crystals! Salt, granite counter tops, scouring powders, sinks, toilets, and bath tubs. Drilling and mining, power generation and electronics all utilize crystals in some form to serve us in ever improving ways. We acknowledge these advances in applied technology (one might say crystal technology) with formal and informal labels like the Stone Age, Iron Age, Concrete Age, Atomic Age and Computer Age.

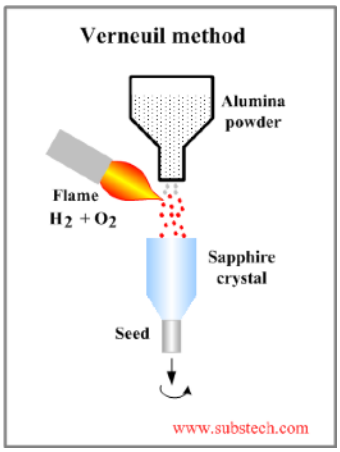
Today, a good list of the top ten industrial applications of crystals might look like this:

1. Electronics & Semiconductors - Silicon Crystals
2. Timekeeping (Quartz Watches & Clocks) - Quartz Crystals
3. Optics & Laser - sapphire, yttrium aluminum garnet (YAG) and calcite
4. Medical Imaging & Diagnostics - Piezoelectric Crystals (quartz and lead zirconate titanate, also some scintillator crystals
5. Solar Cells & Photovoltaics - Crystalline silicon
6. Telecommunications & RF Devices - Quartz and Lithium Niobate
7. Industrial Cutting and Drilling - Synthetic Diamonds
8. Display Technologies - Liquid Crystals in LCD screens
9. Scientific Instruments - various crystals for X-ray crystallography
10. Jewelry & Aesthetics - Diamonds, Sapphires, Emeralds and Quartz Crystals

A top ten consumer list would include:

1. Watches & Clocks
2. Smartphones & Tablets
3. Televisions and Monitors
4. Solar Panels
5. Jewelry & Gemstones
6. Health & Wellness Products
7. Home Decor & Interior Design
8. Audio Equipment
9. Video Game Consoles, Laptops and Electronics
10. Alternative/Spiritual Practices
11. Honorable mention: Sunglasses and lenses

I guess the things like salt and ice we'll just take for granted…But you may ask, what about manmade crystals? Good question!



Manmade crystals are widely used having similar performance characteristics of the natural stone but at a reduced cost and higher availability. For jewelry and gemstones, there are alternatives out there for many precious gems. But I mean, who would be caught wearing a manmade ruby or diamond, right? Well, let's not be too quick to judge, especially if you love wearing your high end watch. Back in the 1840's, watch makers discovered using bits of ruby (the hardest stone next to diamond), as bearings. Watch metal bearings and lubricants break down over time but a ruby is smooth and tough providing a frictionless bearing needing no oil, ever! By the 1880's, watch makers and gem cutters were running low on ruby and in1891, Auguste Verneuil perfected the flame fusion process and began the production of millions of synthetic carats. This technique is still used today for ruby, sapphire, spinel (can be used for peridot), alexandrite and corundum (base mineral for ruby and sapphire). Back to the watch…

Since jewel bearings are expensive, the number of wheels in a watch is seen as an indicator of quality which is why you see '11 Jewels' or '21 Jewels' on fine watch faces. See, wearing manmade crystals aren't so bad!

As you can see, it's amazing how much of our lives are affected by crystals which sometimes makes me wonder, are we the next Atlantis?

July Birthstone - Ruby

Credit: ringspotters.typepad.com

Credit: Heidi Kitkowski

The ruby is an extremely popular gemstone coming in at #3 behind diamonds and sapphires in global revenue and volume. You'll find plenty of this beautiful stone worn by celebrities at any formal event. Ruby's are connected with physicality and strength. They may also calm anger and help the wearer with passionate social situations (maybe that's the popularity with celebrities). In Burma culture, the ruby represents life and happiness. In China, a cure from grief, evil thoughts and conflicts.

Ruby is a variety of the mineral corundum (aluminum oxide) plus chromium (red color). It ranks a 9 on the Mohs scale right behind the hardest, diamonds. The name ruby comes from the Latin 'Ruber' or red.

Ruby has long been considered the stone of royalty, so if July is your birth month, celebrate like a King or Queen by wearing this beautiful crystal!

Fabulous Tennessee Fossils

Dr. Michael A. Gibson
University of Tennessee at Martin

FTF 124 – Charles H. Gordon (1857-1934) - Pt. 2

As I noted in the last essay, geoscience courses at The University of Tennessee, Knoxville have been taught since the latest 1800s, but the founding of the department, and hence a formulated degree-granting program, did not occur until the arrival of Charles Henry Gordon, who was specifically tasked to begin a geology program at UT Knoxville. I summarized his early life, educational background, and professional experience in the last essay, noting that part of his training was to apprentice under the renowned Norwegian crystallographer Victor Goldschmidt (1888-1947) where he became smitten by all things mineralogical. In 1907, Gordon was hired into a teaching post as Professor of Geology and Mineralogy at UTK, becoming its first "permanent" geology faculty member. In many ways, his most notable achievement (besides being the first president of the newly created Tennessee Academy of Science, re-establishing a vibrant Tennessee Geological Survey, working with the Phi Kappa Phi Honor Society, and mentoring the Knoxville Boy Scouts – all of which are significant in their own right) was his work to establish and build the geology program at UTK, for which he is acknowledged as the Founding Father of Geosciences at UTK. Gordon established a strong teaching curriculum and set the standard for scientific geologic research in the department during the early 1900s and put UTK geosciences on track to become one of the premiere geoscience programs and research centers in the Southeast, and nationally.

My first introduction to C.H. Gordon was my Ph.D. days at UTK in the middle 1980s. Specifically, C.H. Gordon found his way my preliminary qualifying exams in an unusual way. During my "orals" (a several hour-long interrogation by my committee members designed to test my knowledge of geology, ferret out any weaknesses, and to ensure that I was "worthy" of Ph.D.-level study), paleoecologist Ken Walker asked me to study the pictures of all of the past department chairs that were hanging on the wall of the conference room that we were in and answer the question, "which of these men was the best geologist and why"? How was I to respond to such a philosophical and opinionated question? What was Walker wanting of me with this question? Ken Walker's picture was the last one in the line of about ten pictures, as he was the current department chair at the time. I briefly entertained the political move of choosing Walker, but decided against that (hoping that I was not going to insult him). C.H. Gordon's picture was the first in the line across the wall of about ten people. I did not know who he was at the time, not even his name, but he was the one I chose. Seemingly surprised by my choice (had he expected me to name him?), he gave me a smirk and asked me to explain my choice. I explained my reasoning to Walker, which was that in Gordon's day, geologists did not have the benefit of the modern technology (e.g., advanced binocular microscopes, XRF and XRD, microprobes, computers), well-formulated central concepts of that are standard today (e.g., plate tectonic theory, atomic theory, orogenesis, etc.), and vast funding agencies to support their work. Travel and fieldwork was more challenging in

the last 19th and early 20th century as well. Instead, these geologists had to rely much more on their brainpower and field skills. I argued they were probably more reasoned critical thinkers, more skilled at observation, and by necessity had to be knowledgeable in more diverse areas than geologists of today, and they had to do this in the absence of the technologies we take for granted today. I recall being relieved when Ken Walker said to me that this was a very good observation and that he agreed with my sentiment. Sure enough, once he founded the geology department at UTK, Gordon became well-known for his work on the Holston Marble (see FTF 91), including the stylolites that are common in that rock, and his work on the Barite deposits in the state (more one stylolites next essay).

Fast-forward to today. Two of the original reprint documents that I have in my collection of papers relate to C.H. Gordon's establishment of the geology program at UTK. First is a July, 1907 edition of the *University of Tennessee Record* entitled "Mining Engineering and Geology at the University of Tennessee". This was a 16-page pamphlet put out by UTK to announce expansions at the campus resulting from an 2007 appropriation of $100,000 from the State Legislature to expand sciences related to engineering and agriculture. This included a new building ($50,000). The new building, Science Hall, later to become Ayers Hall (and until a few years ago the home of the geology program for over half a century), housed chemistry and physics, but geology was not taught in this building at this time. The appropriation also funded the expansion of mining engineering and the establishment of the geology program to support mining engineering and agriculture. C.H. Gordon was the man chosen to head the new "Department of Geology and Mineralogy". In the pamphlet, Gordon outlined his new curriculum for geology majors, which consisted of five areas of study (general geology, economic geology, minerology, petrology, and geography (the geography component was what we refer to as geomorphology today). Within each of these areas, a student could take several semester-long courses. Also, within the geography area, there were courses in oceanography and meteorology (the first time either subject was taught at UT). The course numbering system is confusing as the course numbers are reused in different sections without a logical progression.

The 1907 degree program was similar to the current pathway available to modern geology students, so we can credit Gordon with establishing the basic geology degree framework that would eventually be adopted by geology programs on all of their campuses. One difference in this original program from that of today is that you could not be a geology major and take geology classes during your freshman year (although you could certainly be taking courses towards that goal). There were no freshman year geology courses offered, instead students concentrated on English, Mathematics, and History. Presumably chemistry would have also been a freshman course as prerequisite to geology although the pamphlet does not state this. Geology majors entered the official program during their sophomore year by taking Gordon's Minerology 4 - Crystallography, Minerology 5 - Descriptive Minerology, and Minerology 6 - Determinative Minerology courses. There were no geology courses list 1, 2, or 3. They then proceeded through the more advanced courses in petrology, structural geology, economic geology, surficial geology, and historical geology. One more difference in Gordon's program was that his Dynamical Geology 7 Dynamical Geology (essentially physical geology) and Geology 9 Historical Geology are normally the freshman courses for geology

majors in modern curricula as an overall introduction to the breadth of geology, but were junior and senior courses in 1907. Once established, the geoscience program at UTK continued to expand and evolve.

The second C.H. Gordon document in my library is a 1923 pamphlet published by UTK entitled "Syllabus of Lectures on the Elements of Geology", authored by Gordon (Figure 1). My copy of the pamphlet used to belong to H.C. Amick, another UTK professor (more about him in later essays) that came to me via UTK paleontologist Robert MacLaughlin when I was a Ph.D. student and he was in the process of retiring. Gordon had been at UTK for 16 years by 1923. It was customary during the late 19th and early 20th century for professors to publish extended outlines (syllabus) of their lectures for the edification of their students. Often these were a type of textbook for them. By this time, Gordon's program and courses had become well-seasoned and expanded greatly from the initial 1907 program described above. This 40-page pamphlet contains extensive content that includes the history of geology globally, nationally, and within Tennessee (including Gordon's role in establishing the Tennessee Division of Geology), definitions of all branches of the science, extensive mineral chemistry (his forte), rock classifications, and paleontology. It also outlined the position of geology within the other sciences, including with astronomical cosmological concepts. By this time, the "geologic column" was considered a fundamental learning requirement for students and Gordon presented the column and the geologic time scale as it was in that day (sans the Paleocene Epoch for some reason and a with different names for periods of the Proterozoic and Archean eons). His time scale did not include dates. Prophetically, Gordon's curriculum in 1927 was organized around the basics "spheres" (atmosphere, hydrosphere, lithosphere, etc.) in much the same way that NASA's 'Earth Systems Approach" of the 1990s revolutionized modern geology curricula.

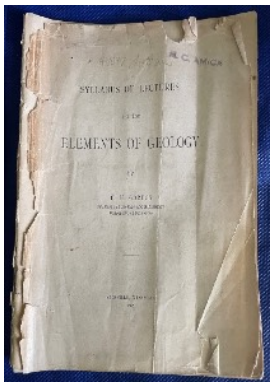


Figure 1

UTK geology program "founding father" G.C. Gordon can be credited with establishing the foundation for the legacy that is geosciences at UTK now. All of these years later, after answering Ken Walker's question during my prelims and asserting Gordon's importance and "bestness" without any real knowledge of the man or his works, basing my assertion solely upon the position of his picture in a chronology of department heads, along with an understanding of the history of geologic knowledge progression, I feel that my instincts were good and that I reasoned well for a student under pressure and put on the spot! Gordon really was an amazing scientist, and by all accounts, an excellent educator. He was a consummate minerologist and petrologist but made his mark in paleontology as well. His contributions to the status of geology and science in Tennessee were equally monumental as was his contributions to UTK. He truly showed breadth of knowledge, civic leadership, and scientific stewardship. Next-up, Gordon's work on stylolites.

Figure 1. C.H. Gordon's 1927 pamphlet "Syllabus of Lectures on the Elements of Geology" containing the content of Gordon's introduction to geology course (from the author's personal library). This pamphlet was given to UTK geologist H.C. Amick, who passed it on to UTK paleontologist Robert MacLaughlin, who then passed it on the author in 1985

Bench Tips

Brad Smith

See More of Brad's Smart Solutions for Jewelry Making Series on Amazon right here.

Do Bezles Shrink?

The engineer in me says there's no reason a bezel should shrink when I solder it onto a base plate, but I sometimes find that the stone won't quite fit into the bezel that was perfect just before soldering.

If that ever happens to you, here's a fix that usually works for those times when there's just a minor problem. I file or sand the stone down a little around its base. For soft cabs like Turquoise, Lapis, Jet or Howelite, you can use a sanding stick. Harder cabs like jasper or agates will require a diamond file. In a pinch, a ruby nail file from the drug store will work.

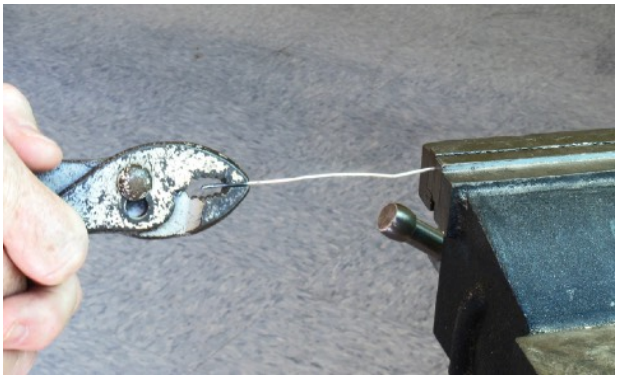
There are two important things to remember when doing this. First, you can only make a minor adjustment to the stone's size. All filing or sanding has to be hidden by the bezel because it takes the polish off the stone.

Secondly, remember to round off all sharp edges on the bottom of the stone. A sharp edge here might sit on a little extra solder at the bottom joint of your bezel. Any problem with the fit in this area might break the stone as you burnish the bezel down onto it.

Straightening Wire

Have you ever reached for your silver wire only to find that it's all bent up? The easiest way I've found to straighten it out is to stretch it a bit.

Simply put one end in the bench vise and grab the other end with a pair of serrated tip pliers. Then pull just enough to feel the wire stretch like a rubber band. This works best on smaller wire diameters, up to about 16 ga.



Be careful if you are trying to pull hard on a thick wire. Brace yourself in case the wire breaks or pulls out of the pliers.

July Rock Star Birthdays

1	*Fred Solang*
3	*Wayne Williams*
5	*DeeDee Goossens*
5	*Clay Crumpton*
6	*Olivia Lee Beil*
8	*Jorge Leal*
9	*Christine Anderson*
10	*Dakota Ownby*
10	*Nannett McDougal-Dykes*
13	*Sarah Siegel*
14	*Sue Nicholson*
17	*Scarlett Stallings*
21	*Regina Tutor*
21	*Angelina Wang*
21	*Susan Vaughn*
26	*Devin George*
28	*Drew Buchner*
30	*Misty Solang*
30	*Leslie Davis*

2025 Meeting Dates

- July 11th—Friday at 7:00 P.M.
- August 8th—Friday at 7:00 P.M. (Annual indoor rock swap/potluck dinner)
- September 12th—Friday at 7:00 P.M.
- October 10th—Friday at 7:00 P.M.
- November 8th—Saturday at 10:00 A.M.
- December 12th—Friday at 7:00 P.M. (Annual holiday party)

Adult Programs

July 11: "Ohlendorf Dig Site" Mitchell Childress
August 8: Rock Swap

April Board Minutes

Josh Anderson

Zoom meeting called to order 6:32 P.M. Present: Christine Anderson, Joshua Anderson, Bonnie and Bob Cooper, David Kitkowski.

Secretary: Presented March 2025 Board meeting minutes. Minutes approved.

President: Reviewed upcoming events and related newsletter requests.

Treasurer: Report approved.

Membership: One new member and seven renewals.

Adult Programs: Need a presenter for the November 2025 meeting.

Field Trips: No Report

Youth Programs: Jane Coop attending the Pink Palace and Earth Day events and sharing club info. She will begin youth programs in September at Club Meetings.

Library: Researching options for WC book.

Editor: Reviewed and Board approved the format changes.

Show 2025: Amended show dates: 12/4-12/8 2025. Continued contract update work with Dealers. Updated advertising on social media, need grab bag material, door prize options and volunteers. Working on reserving the 2026 April show dates

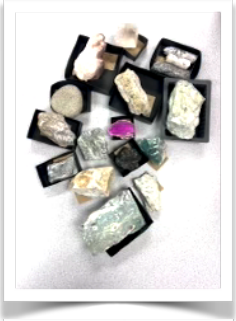
Old Business: Need to update Board Members on accounts for club. Raised election of officers for future agenda item.

New Business: None

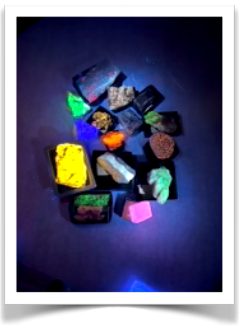
Adjourned 7:34 P.M. by Christine Anderson

June Member Meeting Presentation

Christine Anderson
MAGS- Acting President & Director of Adult Programs



The June meeting of the Memphis Archaeological and Geological Society featured a captivating presentation by Mike Howard titled "UV Light, the Long and Short of It!" Members were treated to an engaging exploration of ultraviolet light and its fascinating effects on minerals and other natural materials. Howard skillfully illuminated the science behind both long-wave and short-wave UV light, highlighting the glowing beauty hidden in plain sight.



There were no technical difficulties throughout the evening, allowing for a seamless experience from start to finish. Following the presentation, members enjoyed a lively and well-received Show and Tell session, where a variety of fluorescing specimens and personal finds sparked conversation and admiration.

Can't wait for July's meeting!

Special Requests for you!

Respond Here!

We need your ideas, input and/or donations for:

- **Adult program ideas** - what are topics would you like to really hear more about at our meetings? There's a good chance others want to hear about this too.
- **Christmas party ideas** - While it may seem far away, our party will be better with more fun ideas for activities, food, decorations, you name it. So please share yours now!
- **Rock Show Grab Bags** - These bags are always a big hit at the show for new Rockhounds as souvenirs and to hopefully spark an interest in earth sciences. If you've been cleaning up your collections, considering sharing your smaller rocks to stuff the bags. Your contribution could be that one point of inspiration for the next geologist or archeologist!

Geology - Ripped from Today's Headlines

Earth's Oldest-Known Rocks Discovered in Quebec

Wait what? 4.16 billion years old, move over Grandma! See the article here: reuters.com

Towering Volcanic "Monolith" Pillar Found in Pacific

A 49 foot volcanic underwater dike near Papahānaumokuākea! I think I was near there on vacation once….See the article here: Beaumont Enterprise

MAGS At A Glance

July 2025

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29	30	1	2	3	4	5
		National Postal Workers Day		Board Meeting	Independence Day	
6	7	8	9	10	11	12
	Nude Recreation Week (7-13)	Cow Appreciation Day			Member Meeting 7 p.m. Ohlendorf Dig Site	
13	14	15	16	17	18	19
				Mount Lokon Eruption (1965) Trinity Nuclear Test (1945- first A-Bomb)		National Daiquiri Day
20	21	22	23	24	25	26
Apollo 11 Moon Landing and Rock Grab				National Tequila Day		
27	28	29	30	31	1	2
Parent's Day			International Day of Friendship			
3	4	5	6	7	8	9