

MISSISSIPPI GEOLOGICAL SOCIETY

*e***BULLETIN**

Volume 72

No. 8

April 2024



PRESENTATIONS: SCHOLARSHIP AWARD WINNERS

THE 2024 SOLAR ECLIPSE
Dr. David Dockery III, RPG

MONTHLY QUIZ
Steve Walkinshaw



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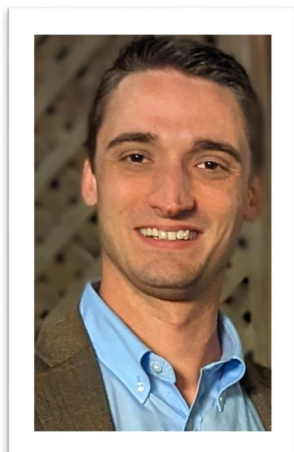
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PRESIDENT'S LETTER



Dear MGS Members,

I hope this letter finds you well and enjoying the onset of spring. As we dive into April, I am excited to share some important updates and upcoming events with you.

First, I want to remind you all of our April meeting scheduled for April 10th, starting at 11:30 AM. We will be announcing the recipients of both the Boland Scholarship Award and the Dustin Johnson Scholarship Award. It is with great pleasure that we will be welcoming the deserving recipients along with their professors, who will also be providing valuable updates on the geology programs across the state. Please join us for what is sure to be an enlightening and celebratory occasion. The cost to attend the meeting is \$25, and we kindly request exact change or check.

Additionally, Tim Palmer and I will be attending the GCAGS Annual Executive Meeting April 10 virtually, where we will provide a report on the status of our society. We will have the opportunity to hear proposals for Geogulf 2026.

Lastly, don't forget to mark your calendars for our Mississippi Geological Society Spring Fling! This social event will take place on Sunday, April 28th, from 2:00 PM to 5:00 PM at the Fertile Ground Beer Co. It promises to be an afternoon filled with camaraderie and networking opportunities. Admission is \$10, and students can attend for free. We look forward to seeing you all there.

In conclusion, April is shaping up to be an exciting and eventful month for our society. I encourage everyone to participate in our upcoming events and meetings as we continue to foster a thriving community of geologists in Mississippi.

Jonathan R. Leard, RPG

MDEQ-Office of Geology





MGS SCHOLARSHIP AWARDS

Faculty & Students,

This month the Mississippi Geological Society along with the Boland Scholarship Fund is proud to honor the most outstanding students for the 2023-2024 year.

Each year, the Boland and Dustin Johnson scholarships award Mississippi students for their hard work and dedication to the Geosciences and their community.

We look forward to seeing you this month to help us celebrate these deserving winners

Best Regards,

Matt Caton
Editor



THE UNIVERSITY OF
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2023-2024 MGS MEETING SCHEDULE

When	What/Who	Where
September 13	Chad Winter - FC&E Engineering	River Hills - 11:30am
October 11	Tim Palmer	River Hills - 11:30am
November 8	Rawdon Seager	River Hills - 11:30am
December 13	Paul Parrish - MDEQ	River Hills - 11:30am
January	Cancelled	River Hills - 11:30am
February 14	David Snodgrass, MSOGB	River Hills – 11:30am
March 13	François-Xavier Dubost	River Hills – 11:30am
April 10	Scholarship Award Winners	River Hills - 11:30am
May 8	TBD	River Hills - 11:30am

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[illegible]



2024 Spring Fling

Hosted by the Mississippi Geological Society

When: Sunday April 28th 2:00-5:00 P.M.

Where: Fertile Ground Beer Co.

800 Manship St Suite 100, Jackson, MS 39202

Price: \$10 Dollar Admission (Students Free)

You are invited to the Mississippi Geological Society Spring Fling. It will be held on Sunday, April 28, 2024 at the Fertile Ground Beer Company in the Belhaven Neighborhood. The Spring Fling will last from 2pm-5pm and will include the full lineup of Fertile Ground brews and heavy hors d'oeuvres. Admission is \$10 and a membership renewal for the membership year beginning on June 1, 2024 and running through May 30, 2025 will be discounted to \$10 if renewed at the Spring Fling. As usual student entry is free. You do not have to be 21 to be in the brewery, but valid id will be required to enjoy a frosty beverage.

Thank you for your continued support of the Mississippi Geological Society.



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MONTHLY POST

Dr. David Dockery III RPG

The 2024 Solar Eclipse

David T. Dockery III, RPG

The 2024 Solar Eclipse will occur (occurred when this Bulletin is out) on Monday April 8, 2024. According to the NASA website, the moon will be closer to Earth than it was in the August 21, 2017, eclipse and will cast a larger shadow as shown in Figure 1.





MONTHLY POST

Dr. David Dockery III RPG

In the 2017 eclipse, the path of totality (where the moon completely blocks the sun) ranged from 62 to 71 miles wide. This year the path of totality will range between 108 and 122 miles wide. Not only will the path be wider, but it will pass over more cities and densely populated areas. In the 2017 eclipse, 12 million people lived in the path of totality. Figure 2 shows MDEQ staff at the 700 Building viewing the 2017 eclipse, with crescent sun images filtering through the shadows. This year the path will pass over 31.6 million people, and because the moon's shadow will be larger, the time in totality will be longer. The longest time in totality in 2017 was 2 minutes and 42 seconds near Carbondale, Illinois. This year, when the path of totality enters Texas, it will be 4 minutes and 26 seconds long.



Figure 2. At left, MDEQ Office of Geology staff, Teague Duncan, Ron Porter, and Steve Champlin, view the August 21, 2017, solar eclipse in the parking lot of the 700 Building. At right, light passing through trees make crescent sun images on the sidewalk.

The solar atmosphere, called the corona, increases and decreases in activity in an eleven-year cycle as the Sun's magnetic field flips. 2017 was a quiet year nearing a solar minimum. During the 2024 eclipse, the sun will be in or near solar maximum. When the moon blocks the disk of the sun, streamers will likely be visible throughout the corona and viewers may see prominences that appear as curls or loops off the sun, or even a coronal mass ejection (a large eruption). No wondering so many people will be traveling toward the zone of totality this year. Carolyn and I will be in Big Sandy, Texas, at a Christian Family Conference the week of the eclipse. I recently bought a new camera lens, tripod, and filter to photograph the solar disk directly. The duration of eclipse totality in Big Sandy will be 2 minutes and 20.6 seconds. While cars crowd country roads, we will be on a large campus, which even has its own airfield.



MONTHLY POST

Dr. David Dockery III RPG

On May 30, 1984, several geologists from the Mississippi Geological Survey traveled to Flint Creek Water Park near Wiggins, Mississippi, to see an annual solar eclipse in the path of totality. Annual eclipses occur when the moon is too far away to completely cover the solar disk, so that the outer edge of the sun is visible. The park was filled with astronomy buffs with sophisticated equipment (Figure 3).



Figure 3. Astronomy buffs with a video camera projecting image of solar eclipse to a screen shaded inside a cardboard box at Flint Creek Water Park. Picture (Kodachrome slide) taken with a 135 mm lens focused on the screen with the eclipse image on May 30, 1984.



MONTHLY POST

Dr. David Dockery III RPG

I took pictures with my Nikon camera, 135 mm lens, and filter using Kodachrome film as shown in Figure 4.

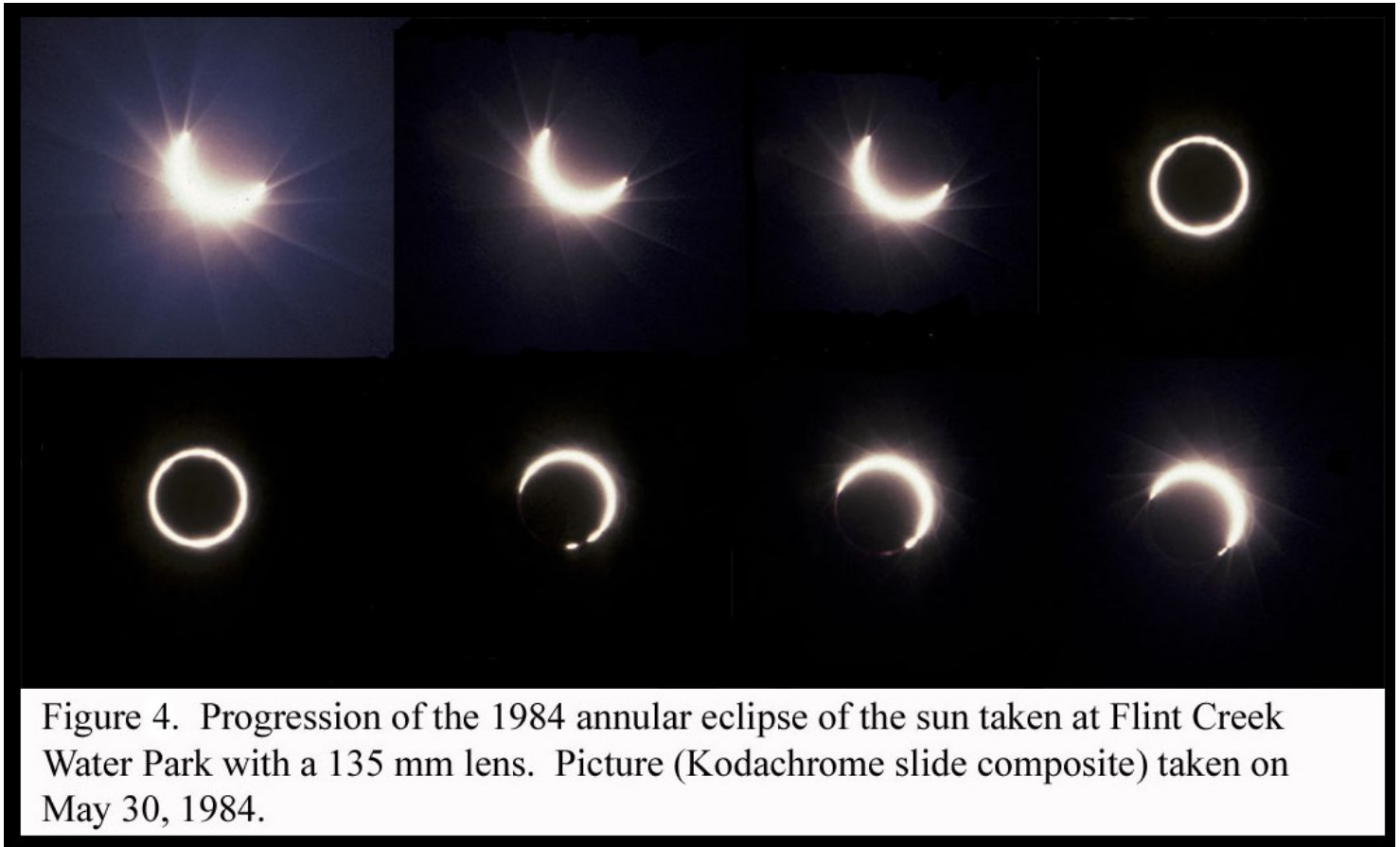


Figure 4. Progression of the 1984 annular eclipse of the sun taken at Flint Creek Water Park with a 135 mm lens. Picture (Kodachrome slide composite) taken on May 30, 1984.

These pictures appeared in our August 2009 issue of *Environmental News* in an article entitled *Institutional History Captured in Kodachrome*. The article lamented the announcement on June 22, 2009, that the Eastman Kodak Company was ending production of Kodachrome film. Over its 74-year run from 1935-2009, Kodachrome film was appreciated in the archival and professional market for its color accuracy and dark-storage longevity. Many of the images used in *The Geology of Mississippi* (2016), with its 1099 figures, were scanned from Kodachrome slides. To photograph the eclipse this year I am equipped with a digital Nikon camera, 150 mm to 600 mm zoom lens, filter, and a steady tripod.



CURRENT PRICES

Market Watch

Crude Oil WTI (NYM \$/bbl) Front Month

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☀ OPEN

Last Updated: Apr 9, 2024 8:31 a.m. EDT - Delayed quote

\$ **86.23**

SETTLEMENT PRICE 04/08/2024

\$86.43

▼ -0.20 -0.23%

< Advanced Charting 1M ▼ \$ % VOL



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\$ **1.887**

SETTLEMENT PRICE 04/08/2024

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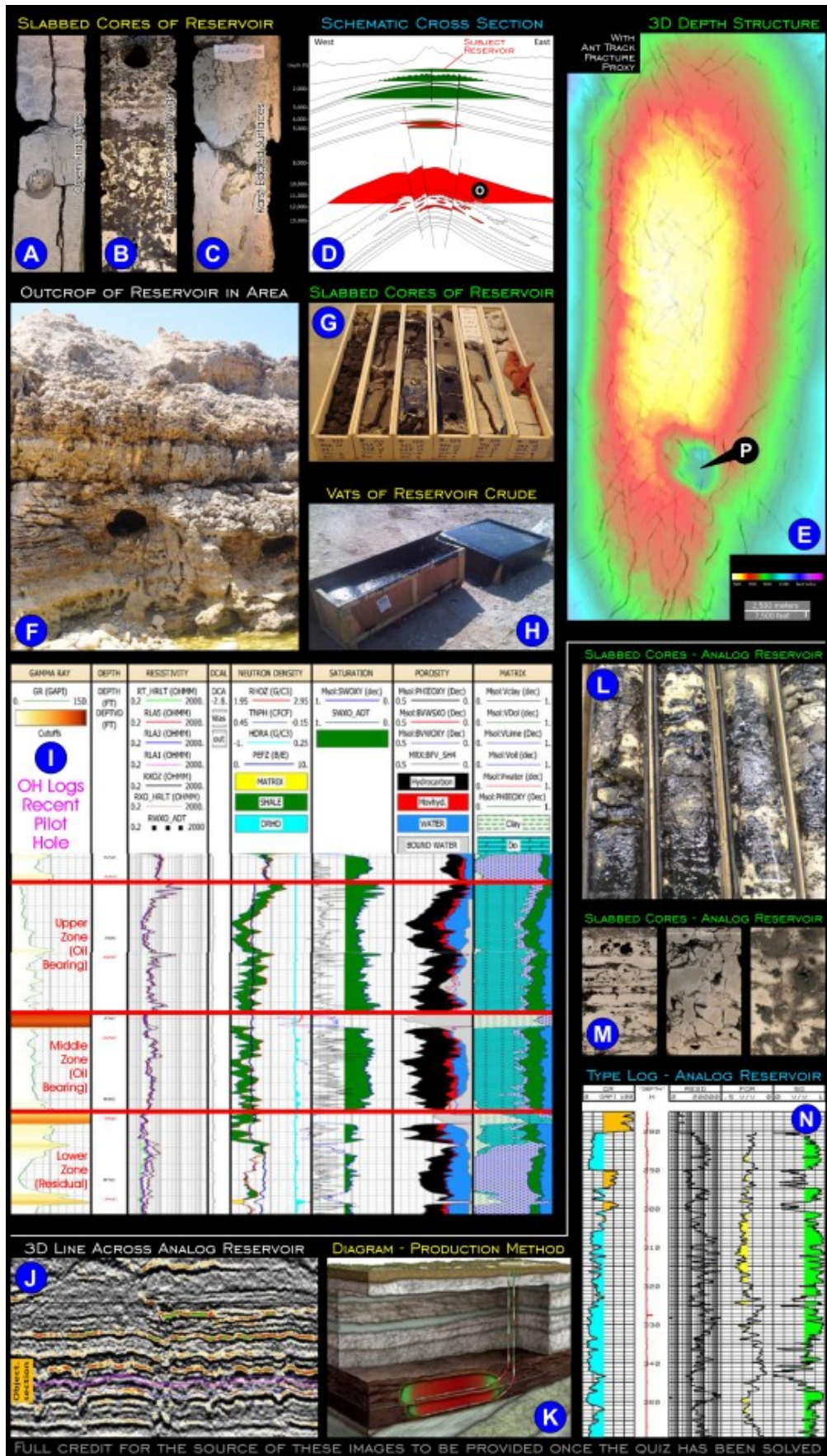
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MONTHLY POST

Steve Walkinshaw





MONTHLY POST

Steve Walkinshaw

Oil patch quiz time. A shallow, highly karsted carbonate reservoir filled with very heavy crude, tar and bitumen is trapped atop a prolific field in this country (see panels "A" through "H"). Excluding large vugs, matrix porosity range is 10% to 37% and permeability ranges from 1 md to 1 darcy.

This reservoir is often compared to a carbonate reservoir in another country that is also relatively shallow and highly karsted (see panels "I" through "N"). The analogous reservoir is estimated to harbor 300 to 574 billion barrels of bitumen in place.

A new production method was recently attempted here; it had previously been implemented in the analogous field ("K").

Questions...

Part 1: What field am I referring to?

Part 2: What country?

Part 3: What's the (a) name and (b) age of the reservoir?

Part 4: Is the karsting of this reservoir considered mostly epigenic or hypogenic?

Part 5: What's the informal name of its topseal?

Part 6: What's the (a) name and (b) age of the underlying reservoir "O"?

Part 7: What's the (a) name and (b) age of the analogous reservoir "N"?

Part 8: In what country is it located?

Part 9: Was the karsting of "N" mostly epigenic or hypogenic?

Bonus:

Part 10: What production method is illustrated in "K"?



GEOLOGY POST

ARTICLES, PAPERS or NEWS?

ATTENTION!!!!!! Industry, Professors and Students:

I am looking for more content from the industry and our schools.

Submissions can include anything from professional papers, thesis abstracts, job opportunities to pictures. Anything!!!!

If you have any information or news you would like to share with the Society **PLEASE** email them to the MGS Editor at:

mcaton13@yahoo.com

Thanks & Regards,

Matt Caton
Editor

GEO LINK POST

USGS TAPESTRY OF TIME AND TERRAIN <http://tapestry.usgs.gov> The CCGS is donating to all of the 5th and 6th grade schools in the Coastal Bend. Check it out—it is a spectacular map. You might want a framed one for your own office. The one in my office has glass and a metal frame, and it cost \$400 and it does not look as good as the ones we are giving to the schools. Call Owen 510-6224 if you want one for your office for \$150. Duncan, Mike, Chris, Dave, Bob Randy, Seb., Kevin, Ken, Craig, Patrick, Robert.

FREE TEXAS TOPO'S <http://www.tnris.state.tx.us/digital.htm> these are TIFF files from your state government that can be downloaded and printed. You can add them to SMT by converting them first in Globalmapper. Other digital data as well.

FREE NATIONAL TOPO'S [http://store.usgs.gov/b2c_usgs/b2c/start/\(xcm=r3standardpitrex_prd\)/.do](http://store.usgs.gov/b2c_usgs/b2c/start/(xcm=r3standardpitrex_prd)/.do) go to this webpage and look on the extreme right side to the box titled TOPO MAPS DOWNLOAD TOPO MAPS FREE.

<http://www.geographynetwork.com/> Go here and try their top 5 map services. My favorite is 'USGS Elevation Date.' Zoom in on your favorite places and see great shaded relief images. One of my favorites is the Great Sand Dunes National Park in south central Colorado. Nice Dunes.

<http://antwrp.gsfc.nasa.gov/apod/astropix.html> Astronomy picture of the day — awesome. I click this page everyday.

<http://www.spacimaging.com/gallery/ioweek/iow.htm> Amazing satellite images. Check out the gallery.

<http://www.ngdc.noaa.gov/seg/topo/globegal.shtml> More great maps to share with kids and students.

www.geo.org Don't forget we have our own web page.

<http://micro.magneet.fsu.edu/primer/java/scienceoptiscu/owersofl0/>

<http://asterweb.jpl.nasa.gov/galery/default.htm> Great satellite images of volcanoes

<http://terra.nasa.gov/gallery/> More here

www.ermapper.com They have a great free downloadable viewer for TIFF and other graphic files called ER Viewer.

www.drillinginfo.com This is an incredible (subscription) well and completion data service for independents. Can be demo'ed for free.

<http://terraserver.com/> Go here to download free aerial photo images that can be plotted under your digital land and well data. Images down to 1 meter resolution, searchable by Lat Long coordinate. Useful for resolving well location questions.

<http://www.fs.fed.us/gpnmf/volcanocams/msh/> This is a live cam of Mt. St. Helens refreshed every 5 minutes. At the bottom are old videos of past eruptions in this cycle. It is worth a watch especially now.



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2023-2024

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(Note: Please contact Steve Walkinshaw at (601) 607-3227 or mail@visionexploration.com for details concerning placing your ad on the MGS web site.)

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1979-1980	Philip R. Reeves	2020-2023	David Snodgrass



MONTHLY POST

Steve Walkinshaw

Answers:

Part 1: What field am I referring to? Alawi Field

Part 2: What country? Bahrain

Part 3: What's the (a) name and (b) age of the reservoir? (a) Aruma Formation, (b) Maastrichtian (Upper Cretaceous)

Part 4: Is the karsting of this reservoir considered mostly epigenic or hypogenic? epigenic

Part 5: What's the informal name of its topseal? the Black Shale

Part 6: What's the (a) name and (b) age of the underlying reservoir "O"? Khuff Formation, Middle to Late Permian

Part 7: What's the (a) name and (b) age of the analogous reservoir "N"? (a) Grosmont Formation, (b) Upper Devonian

Part 8: In what country is it located? Canada (Alberta)

Part 9: Was the karsting of "N" mostly epigenic or hypogenic? While both clearly occurred, it appears most of the severe early karstification was probably hypogenic

Part 10: What production method is illustrated in "K"? steam EOR; SAGD stacked horizontal steam injector - heavy oil producer pair

Part 11: What company operates field "E"? Tatweer Petroleum