

Minutes for the 1619th meeting of the Geological Society of Washington

March 25, 2026

Carnegie Earth and Planets Laboratory, DC

President Ackerson called the meeting to order at 8:05 ET.

Attendance

There were 43 attendees in-person and 16 online.

Minutes

The meeting began with announcements, then moved on to the approval of the minutes from the previous meeting (1618th). The minutes of the 1618th meeting had been posted online and a Minute's Minute was read aloud at the 1619th meeting.

Guests and New Members

5 guests were announced, including Chang-Yu Wen, Lehi Lebon, Unknown (Carnegie EPL), Lynn [Unknown], and Christine Bergman (UMD). 2 new members were announced: Paul Signet and Cain Wilson. Currently at 170 members.

Obituaries

None

Announcements

Big thank you to Carnegie!

Informal Communication

Mike Ackerson: councilmember Virginia Agostinelli is almost done with Dan Doctor's portrait, it will be unveiled soon

Kevin Wong: advances in geochemistry and cosmochemistry journal, open access and free, www.agcj.org

Formal Program

The formal program commenced at 8:13 ET and consisted of three speakers: Kevin Wong (Carnegie Earth and Planets Laboratory), Sajjad Akam (Smithsonian), and Denise Buckner (NASA GSFC).

1st formal talk: Continent-breaking volcanoes: magmatic rifting in Ethiopia (rescheduled from January)

Kevin discussed the intermediate-stage magmatism along the Ethiopian segment of the East-African Rift, a transitional rift area between border faulting and mid-ocean rifting. The Fe-Mg diffusion in olivine and volatile saturation barometry of melt inclusions in olivine were used to get timing of magmatic processes for scoria cones and lavas in two regions at different distances along the rift. This revealed that the transition from border faulting to continental rifting was very rapid, and the transition from continental rifting to oceanic rifting is accelerated as the thinning crust allows for a greater magma flux.

8:15-8:34

Jamie Wray: evidence for varying water content along the rift? Even a small amount can make a big difference

Unknown: how close is the composition to a typical MORB?

Mike Ackerson: how does a rift like this produce intermediate compositions?

2nd formal talk: Bursting the Bubble with Rocks: Decoding Marine Methane Cycling Using Seafloor Rocks

Sajjad discussed the fascinating geochemical environment found at seafloor methane seeps and their role in the marine carbon cycle. MDACs, the solid biogeochemical methane products found on the seafloor, revealed the timing of seep formation and evolution in the Gulf of Mexico, with seep formation peaking around the Last Glacial Maximum, perhaps due to differential sediment loading.

8:40-8:58

Jamie Wray: did you look at the surface crusts at seeps to figure out how long a seep has been active?

Ross Salerno: were the hydrocarbon systems on early earth the same as today, or would there have been another source of methane?

Wriju Chowdhury and Jamie Wray: any thoughts on the Gulf of Mexico naming news?

Andy Campbell: does seep formation differ in active rift ocean basins vs passive environments?

3rd formal talk: From asteroid Bennu to Mars: abiotic organics and the search for life beyond Earth

Denise's talk focused on organic molecules that could be formed by either biological or non-biological means, as pre-biotic building blocks. These were found in samples from asteroid Bennu, where most organics were formed from materials in the parent body rather than interstellar material and experienced multiple phases of aqueous alteration. Terrestrial (biological) and meteoritic (abiotic) fatty acid molecules also have distinct features identified by statistical and machine learning which can be used for predicting the origin of a given molecule. This knowledge is being applied to design the next generation of autonomous instruments on Mars.

9:11-9:32 (33 in-person, 16 online)

Mike Ackerson: what was most surprising about the Bennu results?

Ved Lekic: what are the main distinguishing features from the principal component analysis?

Mike Walter: could one expect these molecules to form on any type of body, and they just got erased on some? Or do they actually only form on some and not others? How do the building blocks make it to the surface unaltered?

Sajjad Akam: could the tiny instrument designed for Mars replace the room full of instruments currently used to do this analysis on Earth?

President Ackerson adjourned the meeting at 9:44.

Respectfully submitted by Karin Lehnigk, GSW meeting secretary