

1599th Draft GSW meeting minutes

March 27, 2024

Cosmos Club: John Wesley Powell auditorium

President Dan Doctor called the meeting to order at 20:02 ET

There were 35 attendees.

The meeting began with the approval of the minutes from the previous meeting (1598th). Those minutes had been posted online and a Minute's Minute was read aloud. No corrections were noted, and the minutes were accepted as read.

Guests and new members. There were no new members but three guests were introduced: 1) M. Rudolph (UMD), 2) Kathryn S Bevington (NASA GSFC Earth Science-613), and 3) Jessica DePaolis (Virginia Tech)

Talk 1: Isabelle Cozzarelli (USGS) with title: Evolution of geochemical process understanding gained from long-term investigations of the Bemidjii, MN terrestrial crude oil spill.

Abstract: This oil spill occurred 45 years ago, and the USGS and collaborators have long-term investigations in place to investigate long-term changes there. The aromatic hydrocarbons are degraded by methanogenic and iron-reducing processes but the longer-chain alkylbenzenes have persisted. Long term effects include contamination of groundwater by Arsenic and trace metals. These geogenic contaminants greatly exceed US EPA drinking water standards in the contaminant plume.

20 minutes

Questions were asked by M. Huang (UMD), J. Christoph (SI), M. Purucker (NASA), V. Lekic (UMD), V. Zebelski (NVCC), and Keith McLaughlan (retired)

Talk 2: Geoffrey Gilleaudeau, George Mason University with title: Perspectives on Neoproterozoic continental weathering and ocean oxygenation and its effect on the evolving biosphere

Abstract: The presentation discussed constraints derived from novel lithium and uranium isotope data from marine carbonates of Siberia, South China, and Australia. The talk finds that the Ediacaran Shuram negative carbon isotope excursion, the largest carbon cycle perturbation in Earth history, was characterized by a pulse of intense congruent weathering of the continents and a shift toward well-oxygenated oceans.

20 minutes

Questions were asked by Brent Leslie (NRC), V. Zebelski (NVCC), George Helz (UMD), M. Huang (UMD), Aaron Jubb (USGS), Mike Ackerson (SI), Ved Lekic (UMD), and Dan Doctor (USGS)

Talk 3: Ben Kligman, Smithsonian Institution with title: Searching for the hidden origins of living tetrapods in Triassic equatorial Pangaea.

Abstract: Following the end-Permian mass extinction, the Triassic witnessed the rise of tetrapod groups familiar from the present including frogs, salamanders, mammals, lizards, turtles, and dinosaurs. These groups were unlikely to be fossilized, and the author collected fossils from microvertebrate bonebeds, largely in what is now equatorial Pangaea (present day Arizona), to elucidate the early evolution of these groups.

20 minutes

Questions were asked by Ester Szein (GSA), V. Zebelski (NVCC), M. Purucker (NASA), Mike Ackerson (SI) and Dan Doctor (USGS).

The meeting was adjourned at 21:55 ET. The next meeting will be held at Carnegie Earth and Planets Lab on Apr. 24 in the Atrium beginning at 18:30 ET