Minutes for the 1612th meeting of the Geological Society of Washington

Cosmos Club, John Wesley Powell Auditorium

September 10th, 2025

President Ved Lekić called the meeting to order at 20:04 EST.

Attendance

There were 49 attendees.

Minutes

The meeting began with the reading and approval of the minutes from the previous meeting, the 1611th meeting, which was held on May 14th.

Guests and New Members

Five guests were announced, visiting from the Smithsonian, Carnegie, and NASA. Four new members were announced: Mariam Naseem (UMD), Daniel Segessenman (GMU), Bradley Garczynski (AAAS Fellow), and Linda Veblan.

Obituaries

Moments of silence were observed for the passing of Richard "Dick" S. Fiske (Smithsonian) and Marilyn J. Suiter (NSF).

Dick Fiske was remembered by Liz Cottrell (Smithsonian), who spoke of his long dedication to GSW and the Washington geoscience community. Over several decades, Dick held numerous leadership roles within GSW, including President in 1987. Cottrell highlighted his contributions were recognized repeatedly through GSW's awards, including multiple Best Paper and Great Dane honors, as well as the Sleeping Bear Award. Dick's career began at the USGS and flourished at the Smithsonian's National Museum of Natural History, where he became a valued colleague, mentor, and advocate for GSW.

Marilyn Suiter was remembered by Ester Sztein (GSA), who emphasized Marilyn's deep impact on geoscience education and diversity. At NSF Marilyn led programs that fostered opportunities for students and broadened participation across the geosciences. Before NSF, she worked with AGI and remained deeply engaged with AGU, GSA, AWG, and NABG, always advancing opportunities for underrepresented students. She also held leadership roles in GSW. Sztein remembered Marilyn's remarkable ability to truly "see" people and her strong commitment to mentoring and supporting the next generation of geoscientists.

Announcements

President Lekić reported that GSW is in the final stages of transitioning to a new membership platform, which will serve as a one-stop system for payments and communication. He thanked Membership Officer Jonathan Tucker and Treasurer Andy Campbell for leading the effort.

Informal Communications

Mike Purucker (NASA) announced that NASA will launch two spacecraft to Mars as part of the ESCAPADE mission, led by PI Dr. Rob Lillis.

Formal Program

The formal program commenced at 20:33 EST and consisted of three speakers: Colin Jackson (Tulane University / AAAS STP Fellow at DOE), Kathleen Mandt (NASA Goddard), and Patrick Beaudry (Johns Hopkins University). The theme of the formal program was Volatiles.

1st formal talk: Colin Jackson presented, "Experimental magma oceans and volatile depletion of rocky worlds." Jackson discussed volatile depletion and the role of magma oceans in determining volatile budgets. He presented results from 1-atmosphere gas-mixing furnace experiments designed to quantify relative volatilities as a function of temperature and fO2. The work suggests that volatile depletion in rocky planets is influenced by magma ocean outgassing. *Talk length: 19 minutes.*

Seven questions were asked by: Mike Walter (Carnegie), Mike Ackerson (Smithsonian), Mark Tyra (NIST), Ved Lekić (UMD), Jonathan Tucker (National Academies), and Patrick Beaudry (JHU), and name unknown (Carnegie). Topics included the aspirationality of equilibrium when vapor pressure is not constant, the use of 50% condensation temperatures as an independent variable, and the implications of conducting experiments at 1 atm.

2nd formal talk: Kathleen Mandt presented, "How volatile composition can reveal the sources of water on the Earth and Moon." Mandt discussed how volatile compositions, particularly hydrogen isotope ratios (D/H), can be used to trace the origins of water in the Earth-Moon system. While Earth acquired some water during formation, this amount is insufficient to account for the oceans, pointing to additional sources. Asteroids and comets carry distinct D/H signatures, allowing comparisons. Results from the Rosetta mission showed unexpectedly high D/H values in a Jupiter-family comet, possibly influenced by sublimation through icy dust grains. The best D/H constraints were obtained from regions farther from such grains. *Talk length: 24 minutes.*

Three questions were asked by: Jonathan Tucker (National Academies), Ved Lekić (UMD), and Larry Meinert (Colorado School of Mines). Topics included follow-ups on D/H ratios and the composition of lunar water.

3rd formal talk: Patrick Beaudry presented "The volatile redox budget of slab fluids and oxidation of the mantle wedge." Beaudry discussed possible mechanisms for the oxidized signature observed in arc magmas, focusing on the role of H_2O, CO_2, and S in transferring oxidizing capacity from slab to wedge. He highlighted how more oxidized magmas can carry greater volatile loads and examined whether sulfur released from slab fluids could be the key driver. Modeling and DEW (Deep Earth Water) calculations suggest that sulfur solubility in fluids and subsequent transport from the slab may provide a pathway for oxidized signatures to reach the surface. *Talk length: 22 minutes.*

Four questions were asked by: Colin Jackson (Tulane / AAAS), Mong-Han Huang (UMD), Mark Tyra (NIST), and Ved Lekić (UMD). Topics included the role of anhydrite in subduction, variability of sulfur

across different arcs, the amount of sulfur subducted in the model, and the sensitivity of such models to recent experimental constraints.

President Lekić adjourned the meeting at 22:15 EST.

Submitted by Jessie Bersson (Smithsonian), GSW meeting secretary