Draft Minutes for the 1610th meeting of the Geological Society of Washington

Carnegie Earth and Planets Laboratory

April 30th, 2025

The 1610th GSW meeting was preceded by an early career poster session, which began at 18:30 EST. Approximately ten early career members and guests from various institutions presented posters showcasing their research.

President Ved Lekić called the meeting to order at 20:06 EST.

Attendance

There were 54 attendees in person and 35 participants online.

Minutes

The meeting began with the reading and approval of the minutes from the previous meeting, the 1609th meeting, which was held on April 9th.

Guests and New Members

Eight guests were introduced, visiting from institutions including NASA Goddard, the University of Maryland, the University of Puget Sound, and the University of Waterloo. Two new members were announced by President Lekić: Michael Powers (University of Delaware), Robert Nowack (Purdue University, Emeritus).

Obituaries

None.

Announcements

President Lekić shared that handouts were available with NSF science funding talking points and encouraged members to engage with their representatives. He also announced the upcoming AGU Day of Action on Capitol Hill, scheduled for June 3rd and 4th. More information: AGU Days of Action

Informal Communication

Several informal announcements were made. One member reported that metadata necessary for accessing hyperspectral information has recently disappeared from government websites. A letter to senators is being drafted to address the issue, and those interested in joining the advocacy effort were encouraged to participate. One member noted a recent agreement between the United States and Ukraine regarding rare earth metals. Jonathan Tucker highlighted a forthcoming National Academies workshop titled *Advancing Marine Geophysical Sensing for Solid Earth Exploration*, scheduled for May 28th. More information is available at the National Academies website.

President Lekić thanked the team at Carnegie Science for hosting the meeting, including Mike Walter, program chair Anne Pommier, Rachel Rausch, Alycia Alexander, Joshua Skrine, Barry Hall, Robert Carter, Maceo Bacote, and the EPL facilities team.

Formal Program

The formal program commenced at 20:20 EST and consisted of three speakers: Jaclyn Clark (University of Maryland), Andrew Steele (Carnegie), and Sander Goossens (NASA Goddard). The theme of the evening was *M³ – Moon, Mars, Mercury*.

1st formal talk: Jaclyn Clark presented, "The Moon Has Its Faults." Jaclyn shared stunning images of the lunar surface, including grabens, wrinkle ridges, and lobate scarps, and explored planetary analogs such as the Yakima Fold Belt. Her talk covered crater counting methods and approaches for constraining relative ages on the Moon. *Talk length: 21 minutes.*

Six questions were asked by: John Jens (US Army Corps of Engineers, Retired), Ved Lekić (UMD), Mong-Han Huang (UMD), Jonathan Tucker (National Academies), Karen *unknown last name* (NASA Goddard), and an *unknown name*. Questions addressed the formation and timing of lobate scarps, gravitational influences from Earth and the Sun, crater degradation metrics, latitudinal trends in tectonic features, and historical connections to past GSW talks.

2nd formal talk: Andrew Steele presented, "Martian Organic Geochemistry: A Tale of Meteorites, Curiosity, and Perseverance." Andrew discussed the search for life on Mars through the study of martian meteorites and data from Curiosity and Perseverance. He explored Raman spectroscopy signals and evidence for graphite in meteorites, examining potential biotic versus abiotic origins and placing the work within a broader narrative of life's emergence. *Talk length: 24 minutes.*

Seven questions were asked by: Bill Burton (USGS, Emeritus), Mike Ackerson (Smithsonian), Dan Doctor (USGS), Kuan-Yu Lin (Smithsonian), Ioan Lascu (Smithsonian), Mark *unknown last name* (NIST), and *unknown name*. Questions covered the possibility of Earth-Mars cross-contamination, what would constitute proof of biotic origin, clarification of chemical distributions, and philosophical questions on our capacity to detect unfamiliar life forms.

3rd formal talk: Sander Goossens presented, "Mercury, Moon, and Mars: From Crust to Core." Goossens described methods for probing planetary interiors using gravity and topography data. He discussed crustal density and thickness measurements on the Moon, Mars, and Mercury using geodetic models from missions such as Lunar Prospector and MESSENGER. *Talk length: 20 minutes.*

Four questions were asked by: Ved Lekić (UMD), Andrew Steele (Carnegie), Jackie Clark (UMD), and *unknown name* (NASA Goddard). Questions addressed reconciling local heat flow with global structure models, low tidal Q values on Phobos, improved resolution for Mercury's gravity field, and implications of young volcanic activity.

President Lekić adjourned the meeting at 22:09 EST.

Submitted by Jessie Bersson (Smithsonian), GSW meeting secretary