

Draft Minutes for the 1580th meeting of the Geological Society of Washington  
September 14, 2022

John Wesley Powell Auditorium, Cosmos Club, Washington, D.C.

President Meinert called the meeting to order at 20:03 EDT.

### Attendance

There were 57 attendees, 27 in-person and 30 online.

### Minutes

The meeting began with the approval of the minutes from the previous meeting (1579th). The minutes of the 1579th meeting had been posted online and a Minute's Minute was read aloud at the 1580th meeting.

No corrections/corrections were noted, and the minutes were accepted.

### New Members and Guests

Nine new members were announced: Virginia Agostinelli, Robert Citron, Sarah Christensen, Teresa Cordaro, Damien Gaul, Helen Hendrix, Melissa Hendrix, Matthew Jones and Austin Shiver. (Affiliations TBD)

Six guests were introduced: Madison Sanders (STR), Bobby Baum, Magdalen Grismer (NMNH), Kumiko Matsui (NMNH), Brian Huber (NMNH) and Caroline Kenney (PVCC).

### Announcements

1) Larry Meinert announced that former GSW President David Applegate has been confirmed by the U.S. Senate as the next director of the U.S. Geological Survey. Larry said that all who have worked with Dave consider him an outstanding choice. Meinert added that Applegate is a worthy successor to a long line of distinguished previous directors, starting with Clarence King and John Wesley Powell. A rousing round of applause followed. Dave will be speaking at the next GSW meeting.

### Informal Communication

There was no informal communication.

### Obituaries

There were no obituaries.

### Formal Program

The formal program commenced at 20:12 EDT and consisted of three speakers: Dr. Zack Torrano (Earth and Planets Laboratory, Carnegie Institution for Science), Dr. Huai-Hsuan May Huang (Department of Paleobiology, Smithsonian National Museum of Natural History) and Dr. Vincent Kofman (NASA Goddard Space Flight Center).

Zack Torrano presented "Refractory Inclusions in Meteorites: Tracers of Early Solar System Isotopic Reservoirs." Refractory inclusions in carbonaceous chondrites include Ca-Al-rich inclusions (CAIs) that are the oldest dated Solar System solids at 4.567 billion years old, and other objects such as amoeboid olivine aggregates (AOAs). These refractory inclusions record a snapshot of the earliest history of our Solar System, and by measuring their isotopic compositions we can learn about the nucleosynthetic sources of the initial material present in the nascent Solar System, the isotopic reservoirs present at this time, and the potential relationships between refractory inclusions and later formed solids. The Cr and Ti isotopic compositions of meteorites have proven to be particularly useful forensic tracers of isotopic reservoirs present in the early Solar

System, and the Cr and Ti isotopic compositions of refractory inclusions therefore provide new information about the formation environment of these objects and the isotopic evolution of our Solar System. *Talk Length: 19'09"*

Questions were asked by: Gabriela Farfan (NMNH), Mike Purucker (NASA Goddard), Mong-Han Huang (UMD), Ved Lekić (UMD) and Larry Meinert (Economic Geology & CSM).

Huai-Hsuan May Huang presented "Biotic Responses to Climate Changes: A Contemporary Issue in Paleoceanography." Marginal seas, such as the Mediterranean and the Sea of Japan, are natural laboratories for understanding biological impacts of environmental changes, such as sea-level changes and oceanic deoxygenation. Huang focused on the deep-sea benthic ecosystem responses to orbital-scale climate changes in the Sea of Japan. She and her colleagues studied two-million-year, high-resolution records of microfossil ostracods at the Integrated Ocean Drilling Program (IODP) Sites U1426 and U1427. Their results showed that (1) the long-term faunal changes were primarily controlled by secular Pleistocene climate events and secondarily by oxygen levels, and that (2) extirpation events related to bottom-water anoxia occurred recursively during the glacial maxima. Huang concluded by noting that the study suggests the high vulnerability of deep-sea benthic fauna to sea-level changes and deoxygenation in marginal seas. *Talk Length: 17'42"*

Questions were asked by: Mong-Han Huang (UMD) and Mike Ackerson (NMNH).

Vincent Kofman presented "The Impact of the James Webb Space Telescope on Planetary Science"

The James Webb space telescope (JWST) has recently been commissioned, and scientists are now in the early phases of the data interpretation and images. Kofman discussed the impact that the JWST has on the field of planetary science, ranging from its capability to map objects in the Solar System at high spatial resolution, to the spectra of exoplanets containing stunning amounts of spectral information. He said that the first early release science images have already demonstrated that observations from the JWST can rival that of space craft, and this will no doubt lead to deep new understanding in planetary science. Kofman noted that JWST is expected to be operational for a decade so its total impact on planetary science and the study of exoplanets will be tremendous. He highlighted JWST's observational capabilities in the context of his work in studying the atmospheres of planets. *Talk Length: 21'48"*

Questions were asked by: Greg Neumann (NASA Goddard Emeritus), Mike Purucker (NASA Goddard), Ved Lekić (UMD), Bill Burton (USGS Emeritus) and Mike Ackerson (NMNH).

President Meinert adjourned the 1580<sup>th</sup> meeting at 21:36 EDT(May-Sept/Oct).

Respectfully submitted,

Beth Doyle