

Moon Rocks and More: Topics in Geology

We will discuss at least three topics during our 6 Thursday sessions and one Saturday walk amongst Princeton's buildings.

Fifty years ago the Apollo moon rocks began to come to earth, and I studied the samples from all six successful Apollo missions and the three Russian (Luna) missions. In October I gave a talk at the Geosciences Department of Princeton University, commemorating this historic episode of scientific discovery. Here is a video of the talk:

https://mediacentral.princeton.edu/media/t/1_hwqz1up9

This will provide a starting point for a roundtable discussion on everything one might want to know about the moon, and more. We will reference power point slides from the video.

The second topic will be on the discovery of a new form of matter, the quasicrystal, which was postulated to exist in the early 80s by Paul Steinhardt. (We will learn why this is a new form of matter). In January, 2009, Paul enlisted my help in determining whether the quasicrystal formed naturally and, if so, how. Paul has written a book about the quest: *The Second Kind of Impossible*. It reads like a detective story that encapsulates the excitement of pushing the envelope of scientific discovery. Paperback copies will be available for purchase in January, 2020 (the hard cover version appeared January, 2019).

The third topic will be the geology of Princeton and New Jersey. Did you know that Morocco used to be right over there? A useful reference book is *Roadside Geology of New Jersey* by David Harper. However, the main reference material will be the Geologic Map of New Jersey. We will use this map in discussing the geology of Princeton. In a couple months I will testify to the Princeton Planning Board on why the physical properties of the Rocky Hill Diabase (which forms Princeton Ridge) need to be considered in making planning decisions; we will discuss the geologic basis of my testimony. On a good-weather Saturday, we will take a stroll amongst the building stones of the Princeton University campus. Many of the building stones are from local quarries.

If we have time for other topics, we will choose from several with which I have direct experience. These include addressing questions such as "why are the Himalayas so high?", "how do continents form?", "why is the Colorado Plateau a plateau?" For the latter topic, we will use *Basin and Range* by John McPhee.

LEADER: Lincoln Hollister is professor emeritus of geosciences at Princeton University, where he taught geology until 2011. He received a BA from Harvard University in 1961 and a PhD from Caltech in 1966.

THURSDAYS: 11:30 a.m. to 1:30 p.m., 6 weeks: February 27 through April 2

LOCATION: PSRC, Maximum 15 seats