



"Volcanoes: The Key to Understanding Life, the Universe, and Everything"

Presented by Dr. David G. Bailey

January 20, 2005

Volcanoes are some of the most beautiful and awe-inspiring natural features on Earth. This presentation will cover two general topics related to volcanoes: 1) the overall importance of volcanic activity with respect to the evolution of planetary bodies, and 2) the potential for, and consequences of, extreme volcanic eruptions on Earth.

The generation and eruption of molten rock onto the planet's surface is the single-most important geologic process in Earth's 4.6 billion year history. In fact, all the terrestrial planetary bodies in the inner solar system have surfaces dominated by just one type of volcanic rock - basalt. The ubiquity of basaltic magmas in the inner solar system reveals a great deal about the origin and evolution of planetary bodies. On Earth, basaltic volcanism also played an important role in the origin of Earth's oceans and atmosphere, and probably even in the origin of life.

Most volcanic eruptions on Earth are relatively non-explosive and have only a small impact on the local environment. Occasionally, however, enormous eruptions can occur that have global consequences. There are two fundamentally different types of extreme volcanic eruptions: 1) flood basalt eruptions, and 2) caldera-forming pyroclastic eruptions. Both produce dramatic effects on the global scale. Most importantly, they can alter Earth's climate, resulting in catastrophic mass-extinction events. A few enormous eruptions in Earth's history dramatically altered the course of biological evolution. If these eruptions had not occurred, the human species would not exist, and

the surface of this planet would be entirely different than it is today.

Presenting January's program is David Bailey. He received his Ph.D. from Washington State University in 1990, and is currently a Professor of Geology at Hamilton College. Dr. Bailey's primary research interests include Cenozoic volcanism in the western US, Paleozoic magmatism in the northeastern US, minerals of NY state, and chemical analysis of archaeological artifacts from the Great Basin, Nevada.

Meeting logistics: The meeting will take place on Thursday, January 20 at the Ramada Inn (1305 Buckley Road, North Syracuse). A social hour will be held at the hotel from 5:30 p.m. to 6:30 p.m., followed by a buffet dinner. The dinner will start at 6:30 p.m. and our featured speaker, Dr. David Bailey of Hamilton College. The presentation will begin at 7:30 p.m. The cost of dinner is \$20 for members, \$22 for non-members, and \$15 for student members. People may also attend only the presentation may due so for a nominal fee of \$3.

Please RSVP by Monday, January 17, 2004 to Bonnie at Parratt-Wolff via e-mail at bolney@pwinc.com or 437-1429.