



Ronald E. Hatcher
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*Once upon a time in Kamchatka: The extraordinary search for
natural Quasicrystals*

Professor Paul Steinhardt,
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Abstract:

Quasicrystals are exotic materials with symmetries that were once thought to be impossible for matter. The first known examples were synthesized in the laboratory 30 years ago, but could Nature have beaten us to the punch? This talk will describe the search to answer this question, resulting in one of the strangest scientific stories you are ever likely to hear.

Question for you to consider while waiting for the talk to begin: Using identical triangles or identical squares, you can completely tile the floor leaving no space. What other shapes could you use? Are there ones that would not work?

Bio:

Paul Steinhardt is the Albert Einstein Professor in Science and Director of the Princeton Center for Theoretical Science at Princeton University. His research spans problems in particle physics, astrophysics, cosmology, condensed matter physics, photonics and geoscience. He is one of the architects of inflationary cosmology and the leading alternative known as the cyclic theory, both competing ideas for explaining the origin and evolution of the universe. He is also one of the originators of the concept of quasicrystals, a new state of matter with rotational symmetries once thought to be impossible for solids. His work has revealed many of their novel properties and led to the search for natural quasicrystals, the subject of this talk. Recently, he has been an innovator in using quasicrystals and other novel patterns to design photonic materials. He received his B.S. in Physics at Caltech in 1974; his M.A. in Physics in 1975 and Ph.D. in Physics in 1978 at Harvard University. He was a professor in Physics at the University of Pennsylvania before moving to Princeton University in 1998.