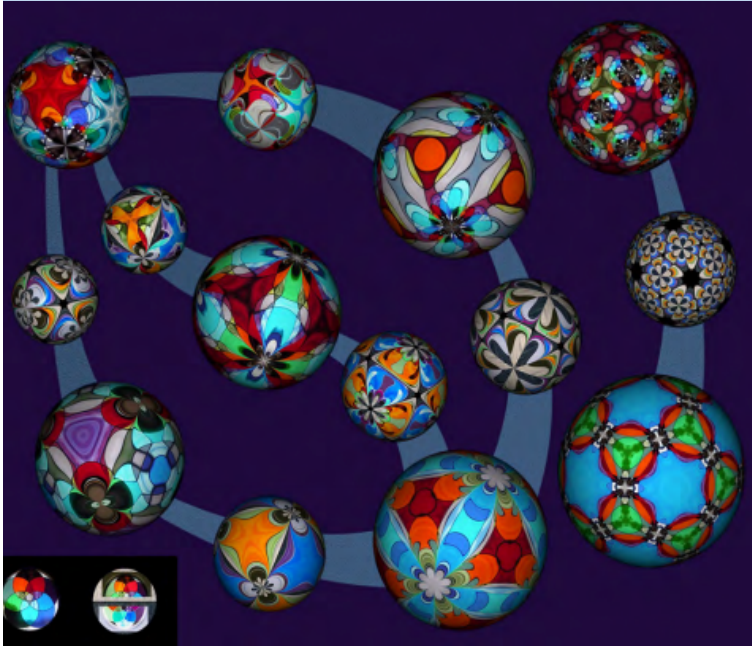


# CREATING SYMMETRIES: MAKING ART WITH WAVES

Frank Farris, Santa Clara University

Monday, October 23<sup>rd</sup>, 4:15 pm, SERC 110A



“Imaginary Planets: A Polyhedral Sampler”, by Frank A. Farris, Santa Clara University, CA

## Abstract:

Standing at the always-intriguing intersection of mathematics and art, Frank Farris introduces the mathematics of symmetry and how to create mind-blowing symmetrical images using his new waveform technique. He came up with this concept by rejecting the traditional wisdom that wallpaper patterns must be built up from blocks—a sort of potato-stamp method. Instead, he created patterns from continuous waves. Whether you like art or mathematics, or both, Farris will help you understand his process. He shows how wave functions draw on photographic images to create beautifully symmetric patterns. The focus is on art, but in the background you can glimpse such mathematical topics as group theory, functional analysis, and partial differential equations.

## About the speaker:

Frank Farris has served as editor of Mathematics Magazine and as the Mathematical Association of America Chair of the Council on Publications and Communications. His book, *Creating Symmetry: The Artful Mathematics of Wallpaper Patterns*, was published by Princeton University Press in 2015. The book describes his new artistic process for creating art from source photographs. In this work, photographs are manipulated using mathematical formulas called complex wave functions, to produce patterns that reference the original in unexpected ways. The resulting art is a surprising blend of mathematical rhythms with organic textures and colors. Exhibitions of this work have been displayed by Carleton College, Cornell University, Bowdoin College, Pomona College, and others. Farris has taught mathematics at Santa Clara University since 1984. His undergraduate degree is from Pomona College (1977) and his Ph.D. from MIT (1981).



“The Temple of the Peach”, by Frank A. Farris, Santa Clara University, CA