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Douglas G Burkholder* (doug.burkholder@lr.edu). *Hidden Beauty in Penrose Tiling: Weavings and Lace*. Preliminary report.

We explore Penrose's subdivision of kites and darts to search for hidden beauty. By dividing the kites and darts in half and selectively coloring them based only on their relative position, we create 15 unexpected and distinctive patterns hidden within Penrose tiling. These patterns tend to have the appearance of a weaving. Alternately, by selectively removing tiles as we subdivide, we can obtain fractal patterns that appear to be lace. (Received September 19, 2016)