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Robert W Fathauer* (tessellations@cox.net). *Mathematical Art and Recreation Based on Kite Tiling Rosettes.*

A kite rosette is a tiling with a single kite-shaped prototile and a singular point about which the tiling has rotational symmetry. A tiling with n -fold symmetry has n kites of the same size arranged in a ring, with kite size increasing with distance away from the singular point. The prototile can be either convex or concave (also known as a dart). Such tilings can be constructed over a wide range of kite shapes for all $n > 2$, and for convex kites for $n = 2$. They are two colorable and possess mirror symmetry about lines passing through the singular point. A finite patch of adjacent rings of tiles can serve as a scaffolding for constructing knots and links, with strands lying along tile edges. The number of strands can be calculated from the rotational symmetry and number of rings of tiles. Such patches serve as convenient templates for attractive graphic designs, and original examples will be presented in addition to prints by M.C. Escher. In addition, these patches can be used as grids for a variety of puzzles and games. Three-dimensional structures created by giving the tiles thickness are also explored. (Received September 13, 2017)