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Byungik I. Kahng* (kahng@math.uiuc.edu), 1409 W. Green St., Altgeld Hall, room 250.,
Urbana, IL 61801. *Kaleidoscopic images and piecewise self similarity.*

A kaleidoscopic map is a symplectic piecewise-affine elliptic rotation map on \mathbb{T}^2 with rational rotation number. We study various examples of kaleidoscopic maps and their invariant gaskets. In a special case, when the rotation number is $\pm\frac{1}{4}$, we completely determine its orbit structure and answer conjectures by Tresser, Adler and Kitchens. We also report an example of periodic tripling cascade that arises from this system. (Received September 02, 2000)