Icosahedra constructed from congruent triangles

It is possible to construct a figure in 3 dimensions which is combinatorially equivalent to a regular icosahedron, and whose faces are all congruent but not equilateral. Such *icosamonohedra* can be convex or nonconvex, and can be deformed continuously. A scalene triangle can construct precisely zero, one, or two convex icosamonohedra, and each occurs. Demonstrated here are two explicit convex examples, the first of which is the unique such object constructed from scalene right triangles, proving a conjecture of Banchoff and Strauss. (A previous version of this paper served as the author's undergraduate honors thesis.)