Min Yan* (mamyan@ust.hk), Hong Kong Univ of Sci and Tech, Hong Kong, Honghao Gao, Hong Kong Univ of Sci and Tech, and Nan Shi, Hong Kong Univ of Sci and Tech. Spherical Tiling by 12 Congruent Pentagons.

The edge-to-edge tiling of the 2-dimensional sphere by congruent pentagons must contain at least 12 tiles. We give almost complete classification of the minimal tiling by 12 congruent pentagons, with the only unsolved problem being some very specific spherical geometrical problem. This is done by first separately classifying the combinatorial, edge length, and angle aspects of the tiling, and then combining the respective classifications together. (Received September 14, 2010)