1116-37-2705   **Maria F Correia*** (`mfac@uevora.pt`), Rua Romao Ramalho, 59, Evora, Portugal, and **Hongkun Zhang**. *Elliptic islands and ergodicity of a family of moon-shaped billiard tables.*

We construct a two-parameter family of moon-shaped billiard tables with boundary made of two circular arcs. These tables fail the defocusing mechanism and other known mechanisms that guarantee ergodicity and hyperbolicity. We analytically study the stability of some periodic orbits and prove there is a class of billiards in this family with elliptic periodic orbits. These moon billiards can be viewed as generalization of annular billiards which all have KAM islands. (Received September 22, 2015)