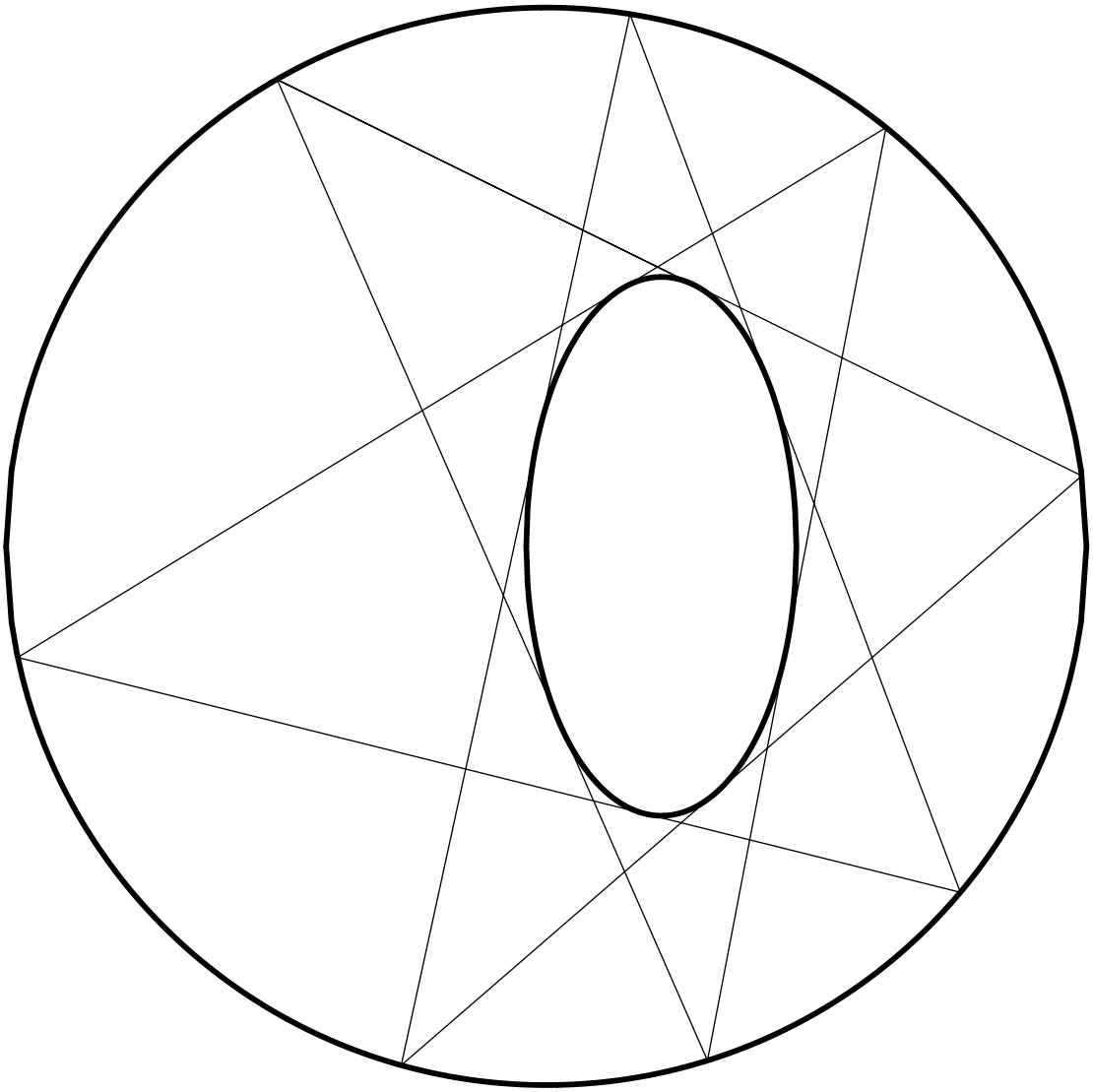
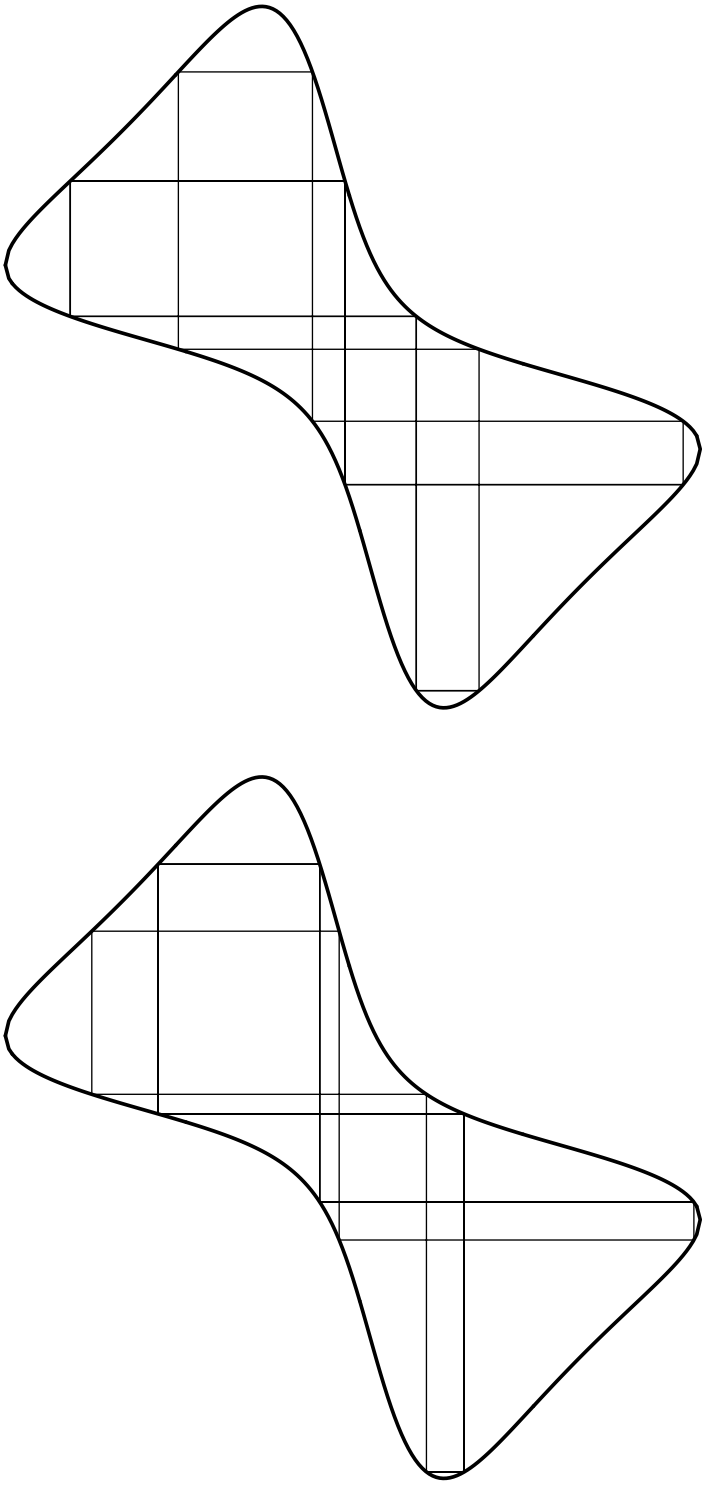
Islands on K3 surfaces

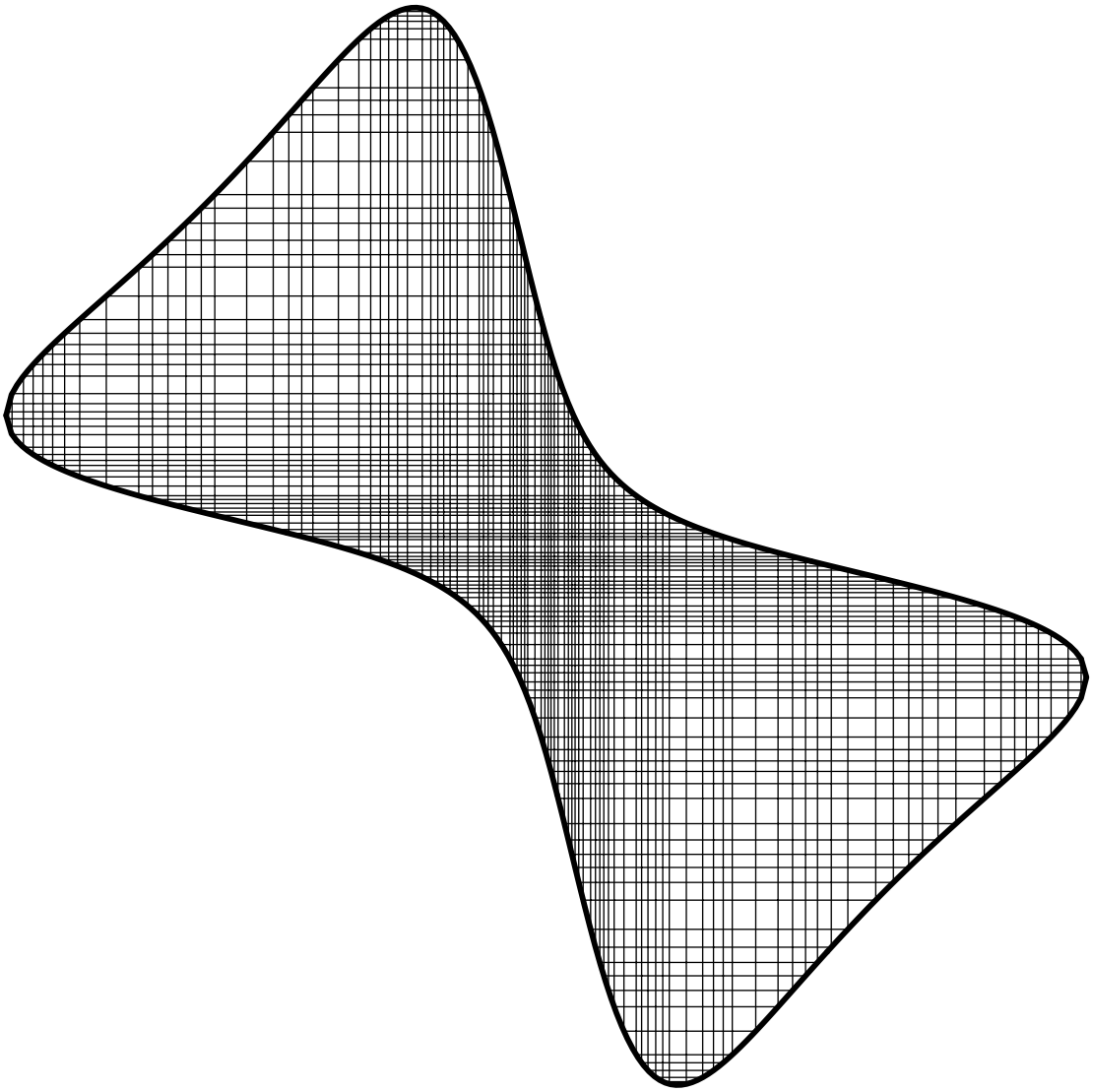
Poncelet's Theorem



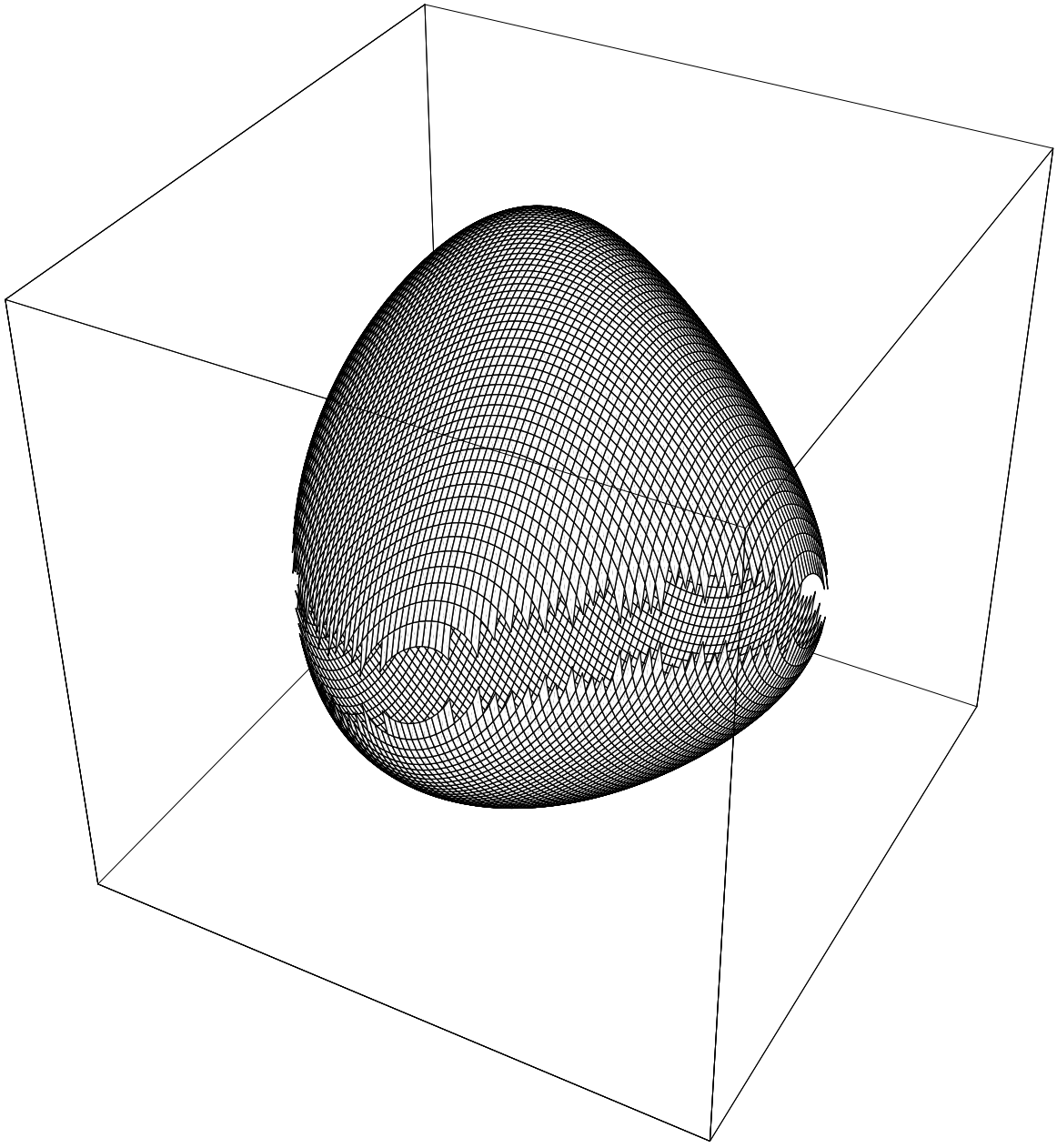
Automorphisms of a curve of degree (2,2)



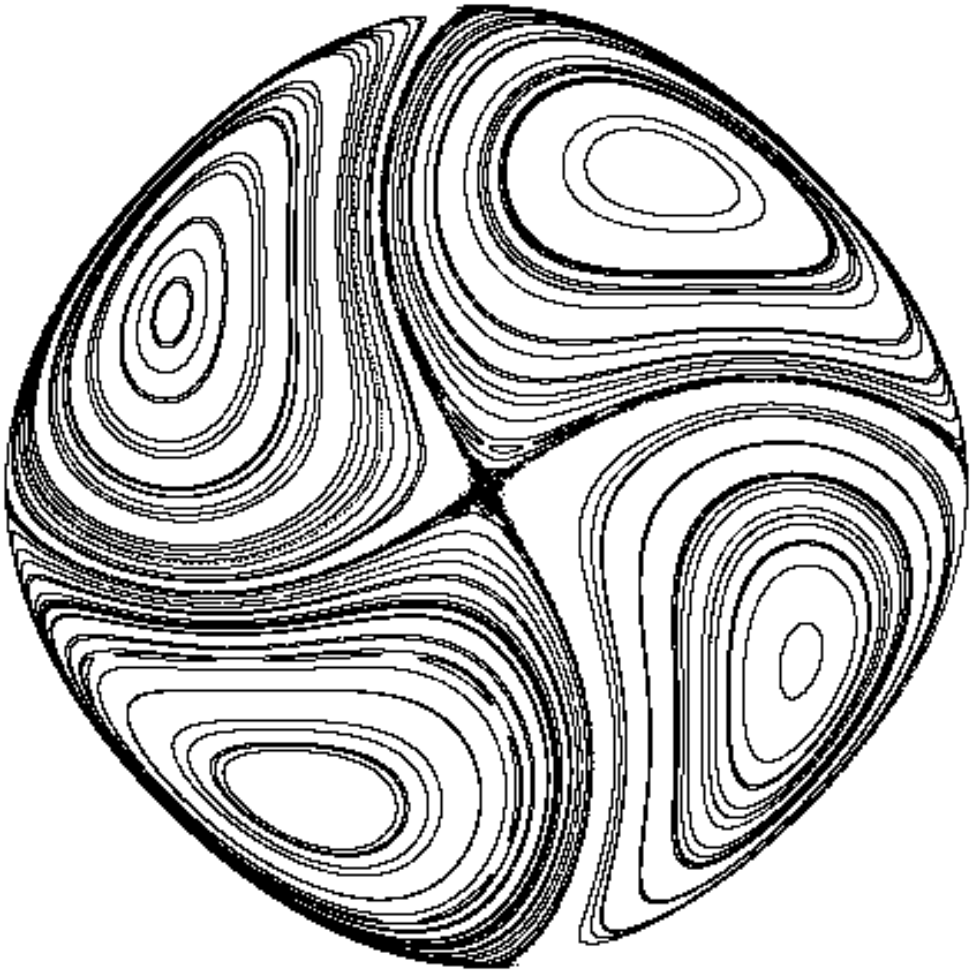
Irrational bowtie



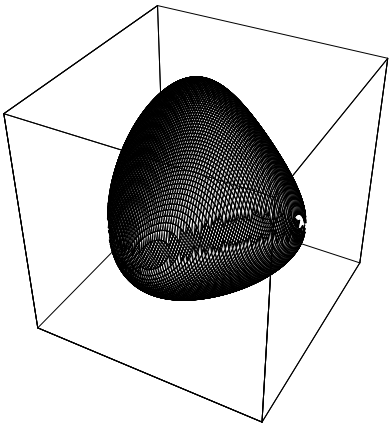
K3 surface, $A = 2$

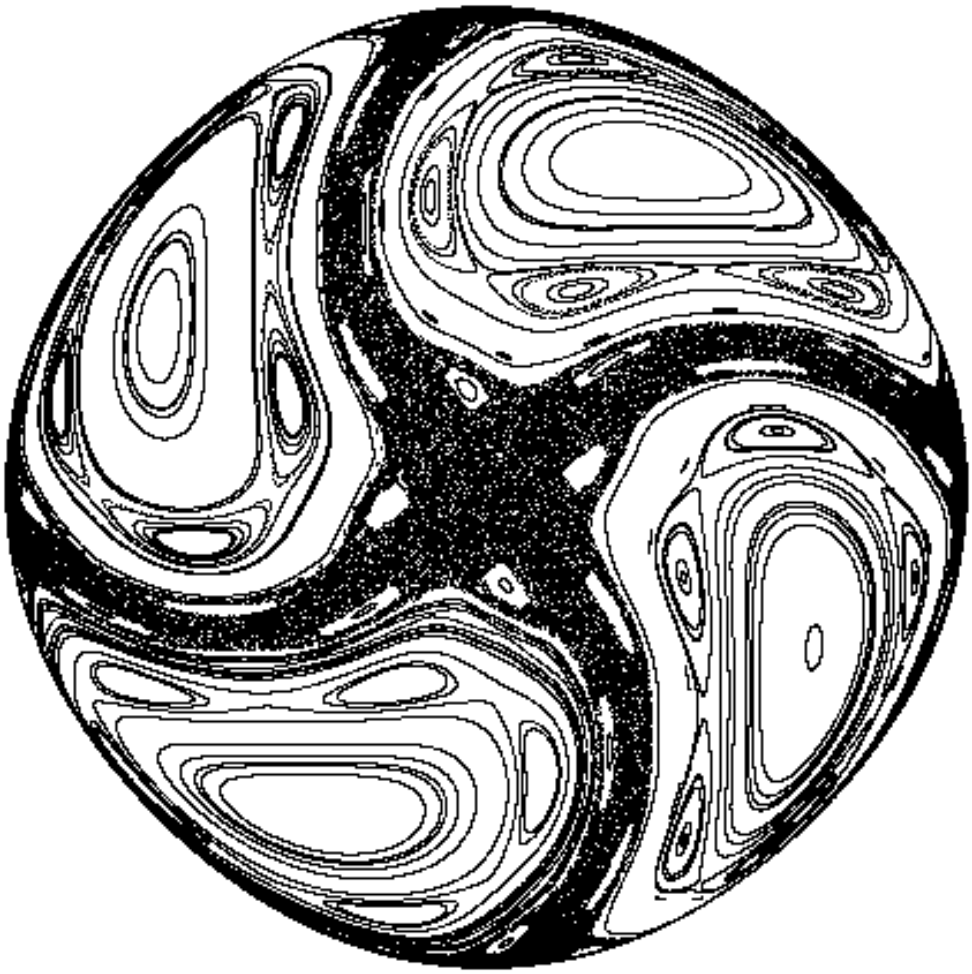


Orbits

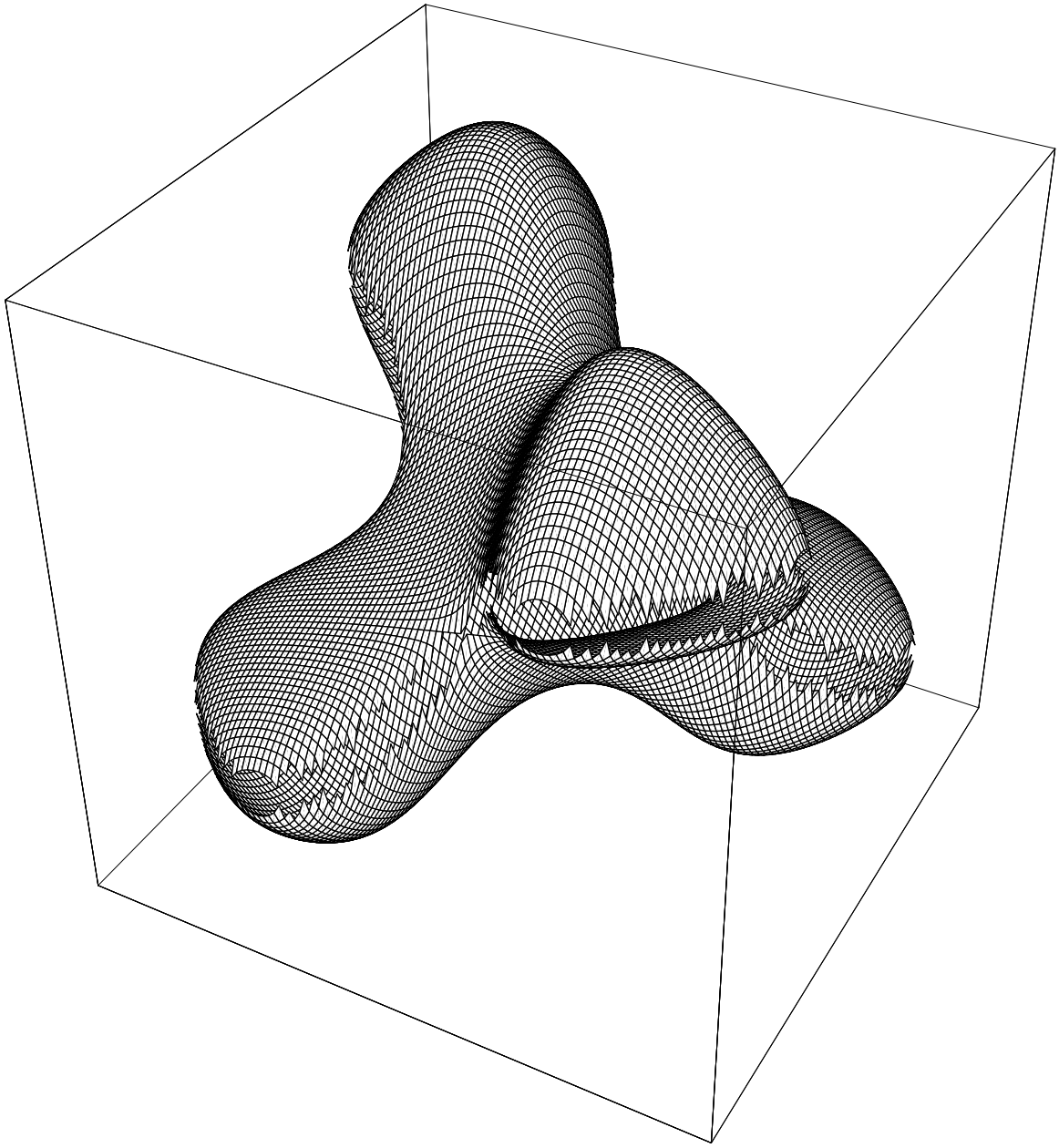


Surface and orbits, $A = 2.5$

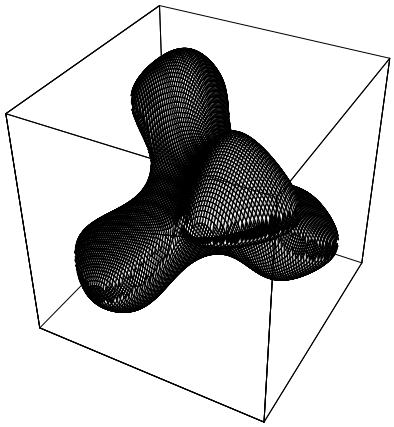


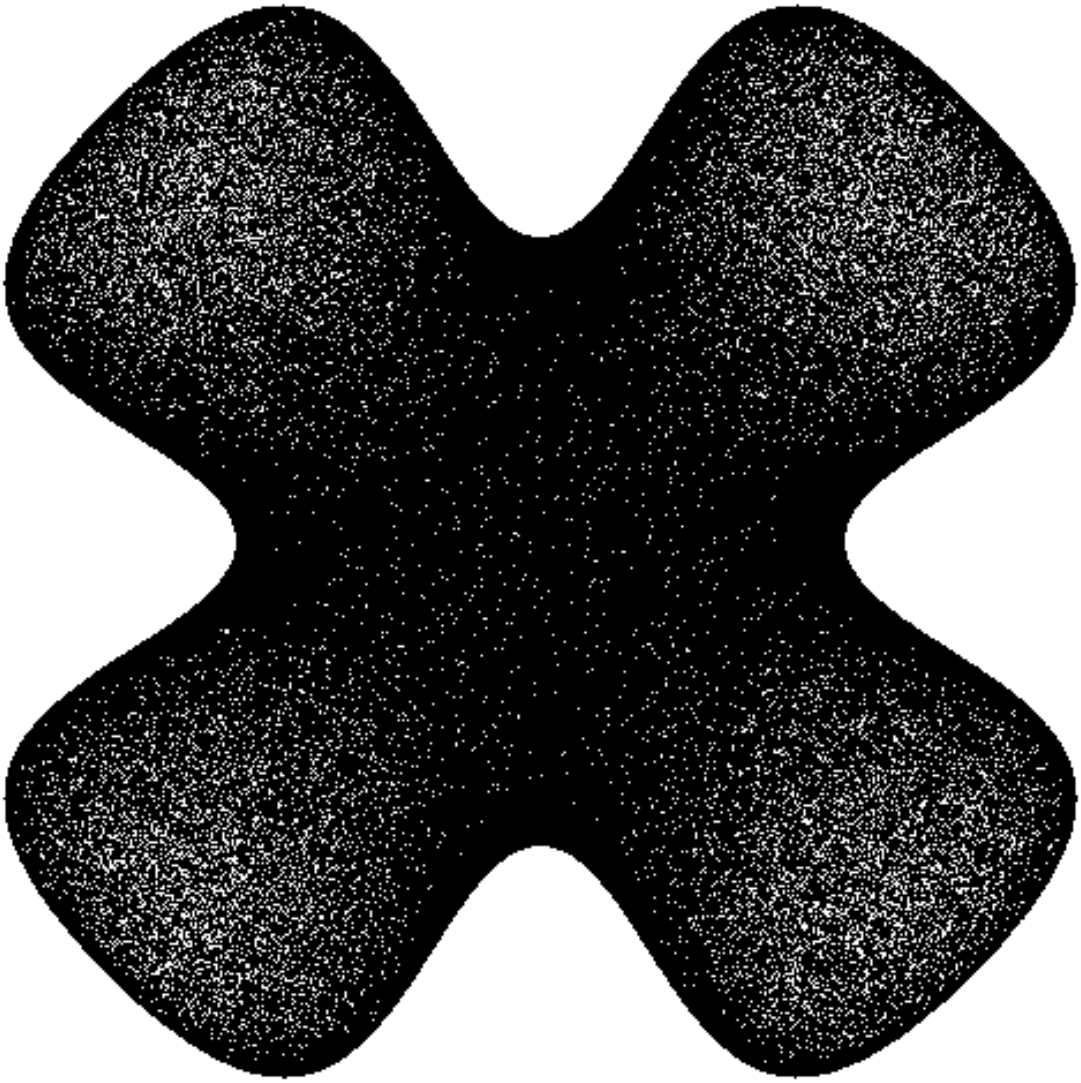


Surface, $A = 8$

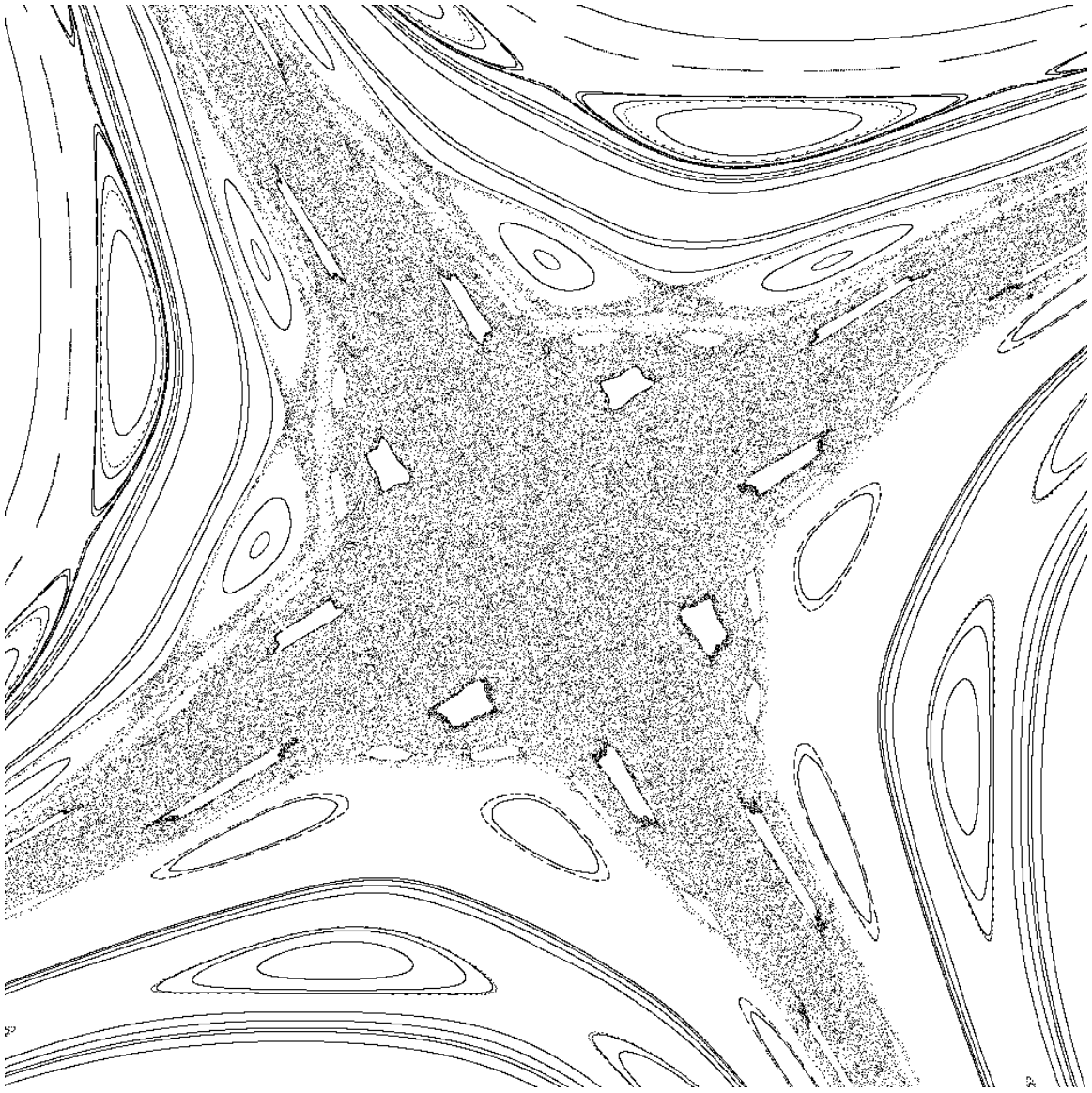


Surface and orbits, $A = 8$





Blowup, $A = 2$



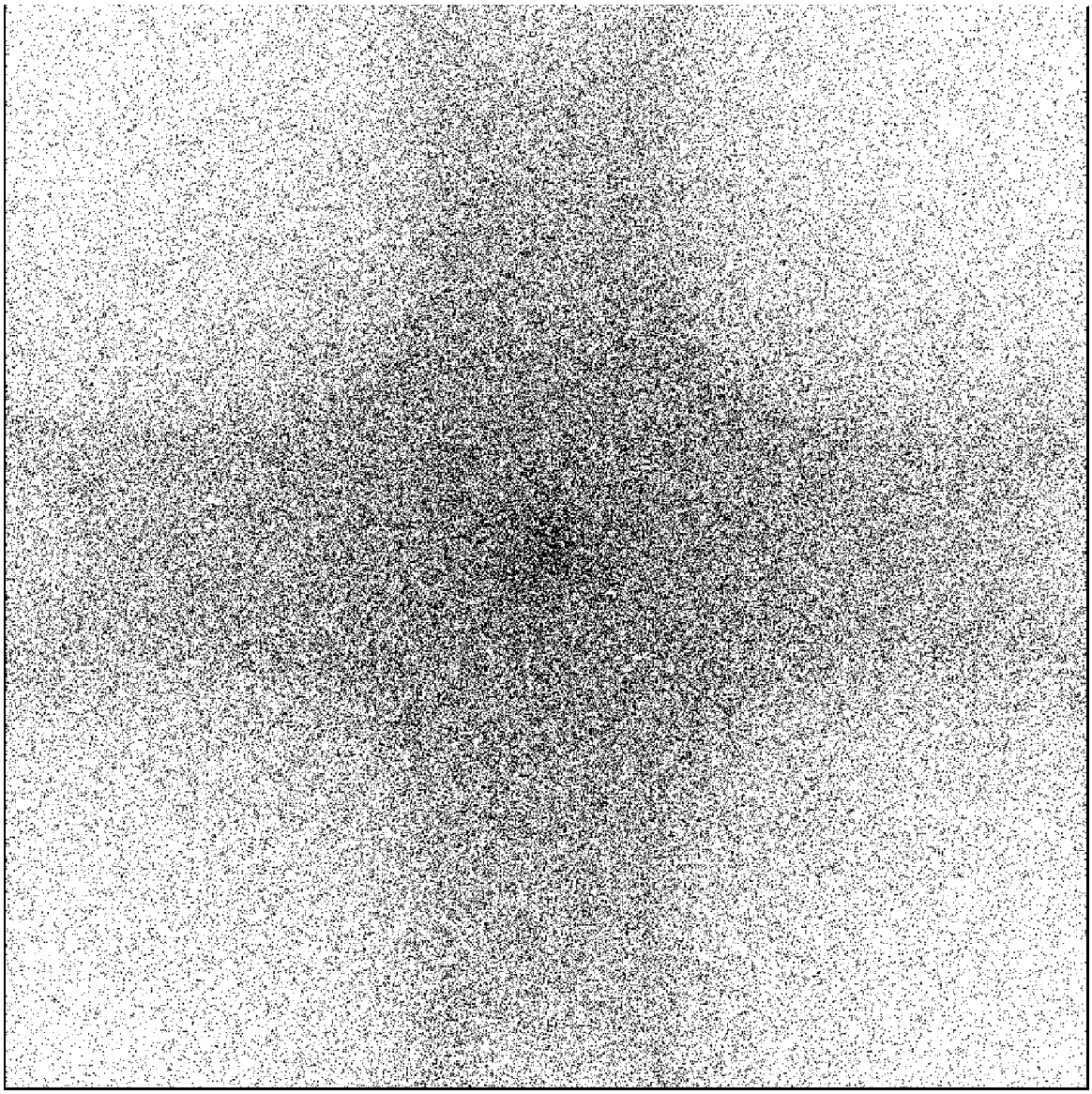
Area-preserving maps

A few hours playing at a computer terminal is sufficient to convince one that almost all area preserving maps have essentially the same features...

> Firstly, one often sees stable periodic orbits. Their stability comes from being surrounded by closed invariant curves.
>
> Secondly, in between some of the larger invariant circles are "island chains", strings of alternating stable and unstable periodic points.
>
> Thirdly, when they are large enough, one can see that they are surrounded by a "sea of stochastic orbits".

(MacKay)

Complex orbit (projected to $\mathbb{R}^2$)



Stable manifold