

# Michael Foster Vermont

This series represents my exploration of the Platonic solids. I like to explore interesting geometric forms that mathematicians conceive and to interpret these forms as lathe-based art. These polyhedra were named after Plato because of his philosophical interest in them. The actual geometric objects were likely discovered by some of his contemporaries who explored math and geometry. These solids (more aptly

named regular convex polyhedra) all have identical polygonal faces with the same number of faces joining at each vertex. Only five forms meet these conditions and all are represented in this series.

The real challenge with these forms is conceiving ways to use the lathe to create the form and still remain true to the math. This requires design work involving a lot of math to figure out how the wood needs to be oriented on the lathe and where the center of each face should be.

This is complicated by the material itself. The size of the wood and the shape help to dictate my approach to designing and turning the object. Three of the piece have an interior spherical hollow, which requires turning the hollow

to a pre-determined size in order to have enough wood left for the desired wall thickness. I also have a very clear idea of my intention for carving and surface decoration before starting, as this can also impact on the design for wall thickness. Clearly, turning forms like these requires planning and forethought before ever approaching the lathe.

I take cues from the geometrical form and the wood I have on hand and let my imagination go—to come up with a design I think might be pleasing to the eye, yet still retain the mathematical underpinnings. I intentionally tried to make each piece in this series quite different from the rest, just as an exercise in creativity. I love the challenges in design and execution that these forms demand. They require planning and patience, but for me, the reward is in the process and seeing an idea come to life. ■

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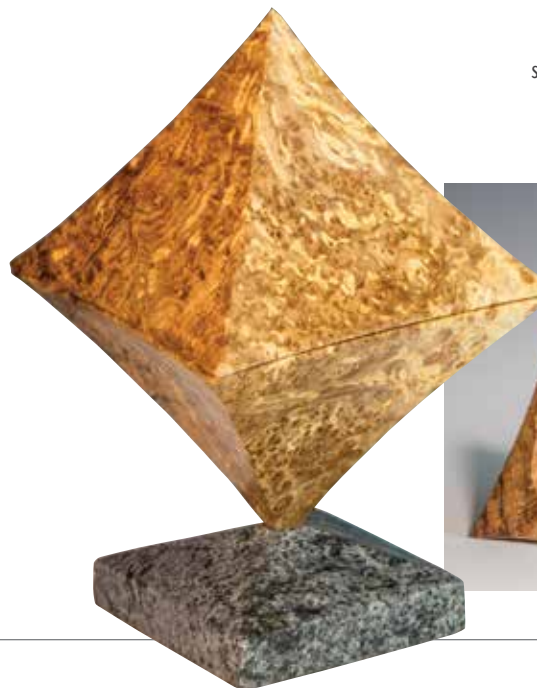
*Platonic Ocean*, 2016, Basswood, acrylics, ink, 23K gold leaf, 6" x 6" x 6" (15cm x 15cm x 15cm)

A turned dodecahedron with twelve pentagonal faces. The five-sided faces seemed a perfect fit for carved starfish—all colored and textured to emulate actual species.



*Octahedron*, 2016, Spalted black ash burl, soapstone, 8" x 5" x 5" (20cm x 13cm x 13cm)

A turned octahedron with eight equilateral triangular faces and an internal spherical box.





*Event Horizon*, 2016, Macassar ebony,  
3½" × 3½" × 3½" (9cm × 9cm × 9cm)  
(not including base)

A turned cube with six square faces and carving inspired by the physics of a black hole.

*Lost Reliquary of Thoth*, 2016, Box elder, acrylics, India ink, Fixatiff, 23K gold leaf, 6" × 7" × 6" (15cm × 18cm × 15cm)

The shape of this turned tetrahedron box, with four equilateral triangular faces, reminded me of the Great Pyramids (though pyramids actually have a square base and four sides). Picking up on the Egyptian theme, I added hieroglyphs and images depicting ideas associated with the ancient Egyptian God Thoth.



*Floral Symmetry*, 2016, American hophornbeam, India ink, acrylics,  
6½" × 6½" × 6½" (17cm × 17cm × 17cm)

A turned icosahedron with twenty equilateral triangular faces. Interesting to have designed this piece with the pentagonal symmetry of the flowers, trilateral symmetry of the pierced inner flowers, and hints of hexagonal symmetry formed by the sides of six of the flower petals against the foliage background.

## Turned on multiple centers



This piece was turned on multiple centers using a custom jam chuck and tailstock support. Its flat surfaces were the result of carefully planned turning on the lathe.