

1106-C5-443

James R Henderson* (jrh66@psu.edu). *Kepler's *Mysterium Cosmographicum**.

In 1596, Johannes Kepler completed his *Mysterium Cosmographicum* (MC), a bizarre text that “explains” the relative distances from the sun to the six then-known planets in terms of the five Platonic solids (astronomy was, in Kepler’s day, largely a mathematical enterprise). It is remarkable that Kepler’s utterly misguided model should have produced results as accurate as they were. I will argue that Kepler’s reasoning springs from three propositions: (1) Kepler, deeply religious, believed god designed the universe with a necessary, specific, understandable plan; (2) Kepler believed that Copernicus was right about heliocentricity; (3) Kepler believed that mathematics can give rise to knowledge of the physical world. I will discuss these propositions in more depth, trace Kepler’s motivation in writing MC, investigate the inspiration of the central idea of the book (the first spark was a single picture), and talk about how the propositions described above shaped MC. Kepler’s writing, in which he lays out his thought processes, the false leads he followed, and his missteps along with his successes, makes for fascinating (and lengthy) reading. (Received August 28, 2014)