The idea that Earth, the planet that we live on and observe from, is at the center of the universe is not a completely random one. In fact it is quite reasonable to assume this, and many of the ancient Greeks did so by using intuition and logic alone. After all, the first thing one would realize upon looking at the sky night after night is that not only is everything moving, but everything is repeating, and thus “**it is manifest to any observer that the Earth occupies the middle place in the cosmos**.” (Ptolemy). Another completely logical reason to adopt a geocentric model is to make the basic observation that all objects we can see will fall toward the earth. One way to interpret this phenomenon is to say that objects must be attracted to the center of the universe, and “**if the earth moved [away from the center] of the universe, heavier objects would still all toward that center**.” (Ptolemy) Thus if everything falls towards Earth and the Earth is spherical, the Earth must be at the center of the cosmos. However Ptolemy’s argument is based on the assumption that things move towards the center of the universe, or that there is a center at all, which is an arbitrary axiom. If this assumption is not made then there remains the possibility for other interpretations of things falling: perhaps things are attracted to other things, and the Earth is a big thing. But if the reasoning of the initial interpretation is sound, another interpretation may not even be considered.

Yet like any theory, the geocentric model is challenged by observations which are in direct conflict with it. One such observation was the problem of retrograde motion, which could be clearly understood: Plato articulates the anomaly by saying: “**By the assumption of what uniform and ordered motions can the [erratic] motions of the planets be accounted for?**” (Plato) Through very clever reasoning, this anomaly could actually be resolved without violating the geocentric theory. Consider one of the assumptions made about nature at the time: “**For motion in space is the first of the kinds of change, and motion in a *circle* the first kind of spatial motion**.” (Aristotle) So if one assumes that it is fundamental that all celestial bodies must move in circles, then accounting for this retrograde motion must involve an explanation that doesn’t violate this. This is precisely what would give rise to Ptolemy’s model of the epicycle: it provides a reasonable explanation to resolve the problem of retrograde motion *without* affecting the “cultural truth” that heavenly bodies must always move in perfect circular motion. Evidently, anomalies can be dealt with while still operating within a framework based on flawed axioms. The observation of an anomaly alone is not enough to alter a cultural truth; the fundamental assumptions about nature themselves must be considered and evaluated. It follows then that if a statement about nature is radically different than how nature appears in daily experience to a human, an uncomfortable conflict arises between the human’s mental model and the new hypothetical model. This discomfort is expressed in Ptolomey’s consideration of a non-geocentric universe, a consequence of which would require the earth to travel at high speeds: “...**but this is *utterly ridiculous*, for the rotation of the earth would be more violent than any.**” (Ptolemy) This may be one of the most daunting obstacles preventing the heliocentric model, or a radical scientific theory in general, to be adopted into the cultural belief: that it’s just not how things *seem* to be.