**Geo functions for irregular bodies (e.g. asteroids)**

Asteroids formed five billion years ago in the solar system. Having failed to integrate with planets, they are the largest space rocks orbiting the Sun. Their size ranges from a few meters to hundreds of kilometres across, and their weight is much less than the moon. As a result of their formation and impacts, they have irregular shapes. Their surfaces are heterogeneous and heavily cratered. The goal of this project is to construct a function in the Wolfram Language to map the surface of an asteroid. The strategy to achieve this goal is first to plot the surface of the asteroid using NASA data. The strategy is then to find a curvilinear coordinate system for the asteroid’s surface. This coordinate system is defined using a metric (i.e. a tenor). For example, in the Cartesian plane, the metric is the collection of the unit vectors representing the x- and y-axis, respectively. The complexity of the processes that formed celestial bodies suggests a diverse variety of asteroids. As a result, each asteroid has a specific metric. The ultimate goal of project is then to construct a function capable of mapping the surface of an irregular 3-dimensional object with a finite volume.