**Geodesy: The Earth isn’t flat (but it isn’t round either)**

While these lessons can be taught as a unit for astronomy or earth science classes, their primary purpose is to function as interjection lessons for a physics class. Physics teachers may choose which labs, activities, and discussions are most useful for the instruction and enrichment of standard physical principles and employ them without disrupting their overall curriculum or objectives. Therefore, these lessons are organized by physical principles—such as kinematics or forces—with the aim of enriching a physics curriculum.

In this study of geodesy, students begin by exploring the problem of defining a universal time system and a stationary spatial reference frame in the dynamic conditions of an ever-expanding universe, followed by a review of data gathering techniques. The next layer is a set of discussions, labs, and activities centered on three geodetic techniques: very long baseline interferometry, GPS, and satellite laser ranging. Students will explore these techniques by using a simple acoustic interferometer and other simplified methods to deduce their fundamental physical principles which will be conceptually applied to geodesy. Afterwards, students will explore some of the applications of geodesy such as measuring tectonic plate motion and post-glacial rebound, and using VLBI for interstellar travel.