1135-C5-2815 **Andrew G. Bennett*** (bennett@ksu.edu), Kansas State University, Department of Mathematics, Cardwell Hall, Manhattan, KS 66506. *Deriving Kepler's Laws in a Differential Equations class.*

In a large differential equations class, students were asked to choose between several possible extension topics. The result was a landslide in favor of deriving Kepler's laws from Newton's laws. Many students expected to learn how Newton's laws lead to Kepler's laws in Calculus, but this topic is often skipped. That expectation not having been met in Calculus only increases students interest in this topic. While usually included in multivariable calculus books, this derivation is more comprehensible when approached using Differential Equations (with some material from Calculus 2 as well of course). (Received September 26, 2017)