

1145-01-1505      **Lawrence Arthur D'Antonio\*** (ldant@ramapo.edu). *Newton Has a Headache but Clairaut Makes it Go Away.*

Newton's headache was his failure to compute the motion of the moon using his universal theory of gravitation. In particular Newton was not able to account for the rotation of the lunar apsides. In this talk we will see how Alexis Clairaut, after trials and tribulations, was able to solve this problem. We will discuss Clairaut's initial failure, his proposal to modify the inverse-square law of attraction, the subsequent dispute with Buffon, and the final success in 1749 using a clever iterative calculation. Newton's headache would surely have cleared up, if Newton were still alive. (Received September 22, 2018)