First order post-Newtonian analysis of a chaotic three-body problem. J.J. CAMPBELL, MIRIAM NEUBAUER, DAVID TANNER, DAVID NEILSEN, Brigham Young University — In classical Newtonian gravity, the three-body problem is known to be chaotic for general initial data. We investigate the existence of chaos for the three-body problem in general relativity using the first post-Newtonian approximation. We examine the scattering of a third object from a binary pair, discuss solution methods, and present results suggestive of general relativistic chaos.

David Neilsen
Brigham Young University