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Chaos in the Relativistic Three-Body Problem MIRIAM CONDE, J.J. CAMPBELL, DAVID TANNER, DAVID NEILSEN, Brigham Young University — We investigate chaos in general relativity by studying three-body interactions using the post-Newtonian formalism. The initial data consist of a binary pair (with equal or unequal masses) that scatters a third object that comes from infinity, and these data are parametrized by the orbital phase of the binary pair and the initial impact parameter of the third body. The final state of the system is characterized by quantities measurable at infinity, and we examine the sensitivity of these quantities on the initial parameters. Finally, we calculate Lyapunov exponents directly from the simulations to quantify the chaotic behavior.

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