Binding energy and geometry of $e^+\text{Na}$ JANINE SHERTZER, College of the Holy Cross, S.J. WARD, University of North Texas — We calculate the non-adiabatic binding energy and geometry of the weakly bound state of $e^+\text{Na}$. We use the Peach model potential to describe the $e^+\text{-Na}^+$ and $e^-\text{-Na}^+$ interactions and solve the effective three-body Schrödinger equation with the finite element method. Because the model potential gives rise to three spurious states (corresponding to 1s, 2s, and 2p), the true non-adiabatic ground state of $e^+\text{Na}$ is embedded in a dense spectrum of spurious states. We developed a technique for extracting the correct ground state for $e^+\text{Na}$, even when the energy is nearly degenerate with a spurious level. This is the first calculation to include the quadrupole term in the polarization potential.