Inspiralling

Quasi-circular inspiralling to order $1/c^{10}$:

$$-\mu\frac{dE_{\rm circ}}{dt} = \mathcal{L} = \frac{32c^5}{5G}\nu^2 x^5\Big[1+\Big(-\frac{1247}{336}-\frac{35}{12}\nu\Big)x + 4\pi x^{3/2} + \Big(-\frac{44711}{9072}+\frac{9271}{504}\nu+\frac{65}{18}\nu^2\Big)x^2 - \Big(\frac{8191}{672}+\frac{535}{24}\nu\Big)\pi x^{5/2}\Big]$$

$$x = \frac{1}{4}\tau^{-1/4}\Big[1+\Big(\frac{743}{4032}+\frac{11}{48}\nu\Big)\tau^{-1/4} - \frac{1}{5}\pi\tau^{-3/8} + \Big(\frac{19583}{254016}+\frac{24401}{193536}\nu+\frac{31}{288}\nu^2\Big)\tau^{-1/2} - \Big(\frac{11891}{53760}-\frac{29}{1920}\nu\Big)\pi\tau^{-5/8}\Big]$$

$$\tau = \frac{\nu c^3}{5Gm}(t_c - t)$$