

Galactic Definitions

Orbital Frequency $\Omega = \frac{V}{R}$

Oort constant A $A = \frac{1}{2} \left(\frac{V}{R} - \frac{dV}{dR} \right)_{R_0}$

Oort constant B $B = -\frac{1}{2} \left(\frac{V}{R} + \frac{dV}{dR} \right)_{R_0}$

Note that $\Omega = A - B$

Epicyclic Frequency $K^2 = -4B\Omega = -4B(A-B)$

For a circular orbit, $V = \frac{2\pi R}{P_2}$

where P_2 is the orbital period.

Therefore $P_2 = \frac{2\pi}{\Omega}$

Similarly, the epicyclic period $P_K = \frac{2\pi}{K}$