

Lecture #9

$$\Delta\phi = \int_{r_{min}}^{r_{max}} \frac{L_z dr}{r^2 (2m(E - V_{eff}))^{1/2}} \quad \text{closed if } \Delta\phi = 2\pi \frac{m}{h}$$

almost circular orbits - potential homogeneous

$$V = \alpha r^k$$

$$\Delta\phi = \frac{\pi}{\sqrt{k+2}} \quad \text{rational } k = -1, 2, 7, \dots$$

$$k > 0 \quad E \rightarrow \infty \Rightarrow \Delta\phi = \frac{\pi}{2} \Rightarrow k = 2$$

- Today) - continued BK
- interpretation
- Kepler orbits
- IVa) - collision