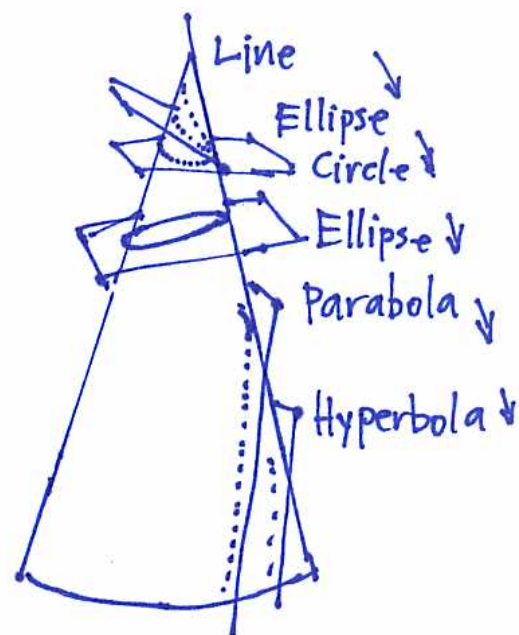


$$r = \frac{p}{1 + e \cos(\theta - \omega)}$$

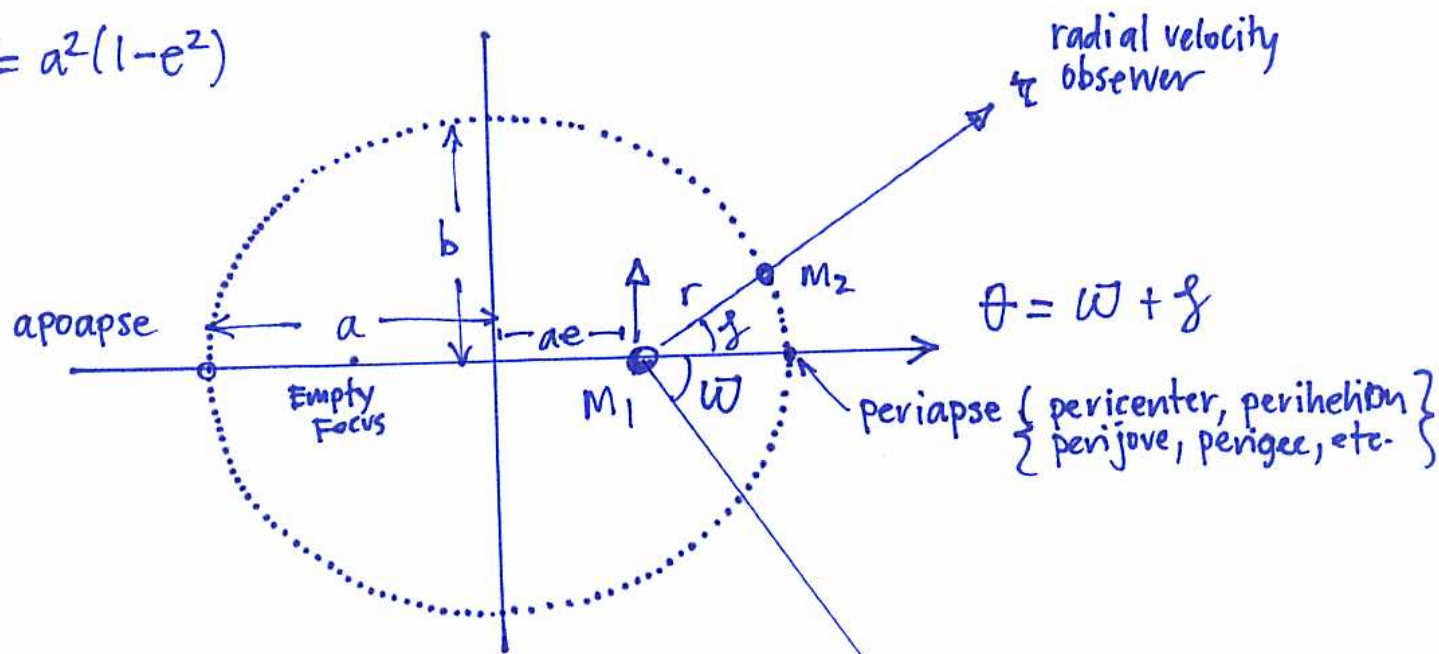
a = semi major axis

q = distance at closest approach

circle	$e = 0$	$p = a$
ellipse	$0 < e < 1$	$p = a(1 - e^2)$
parabola	$e = 1$	$p = 2q$
hyperbola	$e > 1$	$p = a(e^2 - 1)$



$$b^2 = a^2(1 - e^2)$$



ω = longitude of periapse

θ = true longitude

\mathcal{f} = true anomaly

ω
↓
"lvarpi"

reference direction

close approach $d = a(1 - e)$
farthest away $d = a(1 + e)$