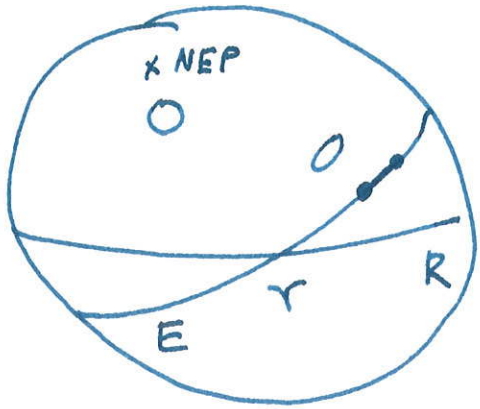
PARALAXA



$$\pi \sim \frac{a}{r} \text{ [rad]} \qquad a = 150 \cdot 10^6 \text{ km}$$

$$r = \frac{a}{\pi \text{[rad]}} = \frac{150 \cdot 10^6 \; 2 \cdot 10^5}{\pi ["]}$$

$$r = \frac{3 \cdot 10^{13} \text{ [km]}}{\pi ["]}$$

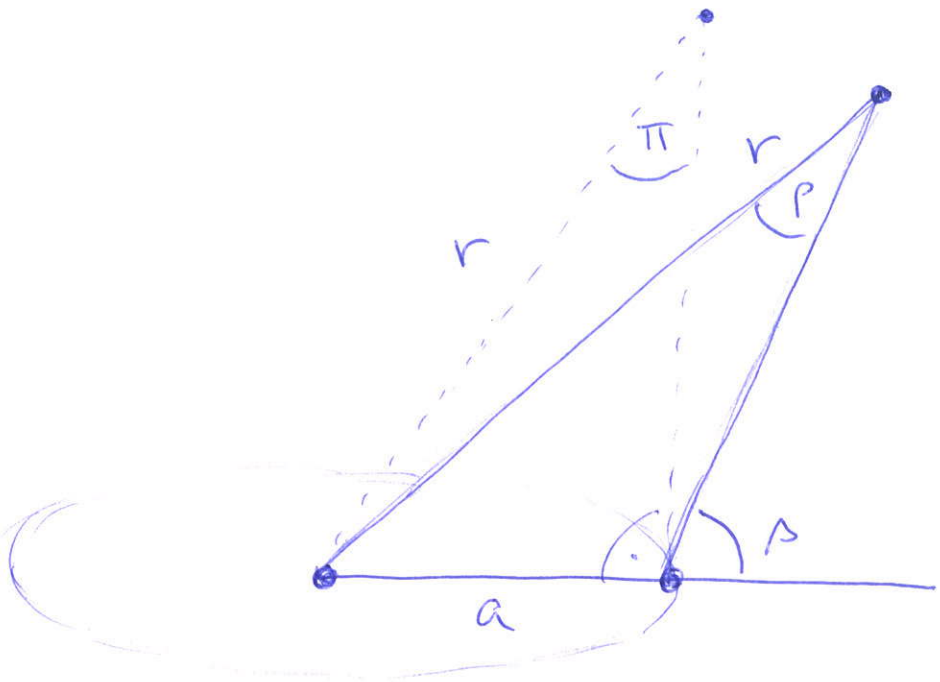
$$\pi = 1' \Rightarrow r \sim 3 \cdot 10^{13} \text{ km} = 1 \text{ pc}$$

$$r = \frac{1 \text{ pc}}{\pi ["]} = \frac{1}{\pi ["]} \text{ pc}$$

$$1 \text{ Ly} = 365{,}25 \cdot 24 \cdot 3600 \cdot 3 \cdot 10^5 \text{ km} \sim 9{,}47 \cdot 10^{12} \text{ km}$$

$$1 \text{ pc} \sim 3{,}26 \text{ Ly}$$

roční paralaxa - obecně



① $\beta = 90^\circ$

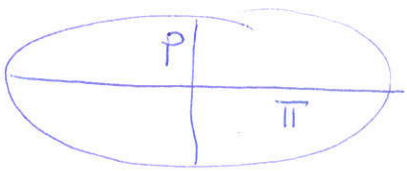
$$\sin \pi = \frac{a}{r}$$

② $\beta \neq 90^\circ$

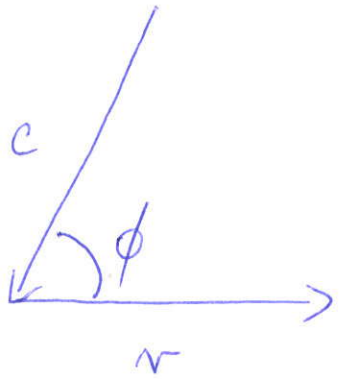
$$\frac{\sin \rho}{a} = \frac{\sin(180^\circ - \beta)}{r}$$

$$\sin \rho = \frac{a}{r} \sin \beta$$

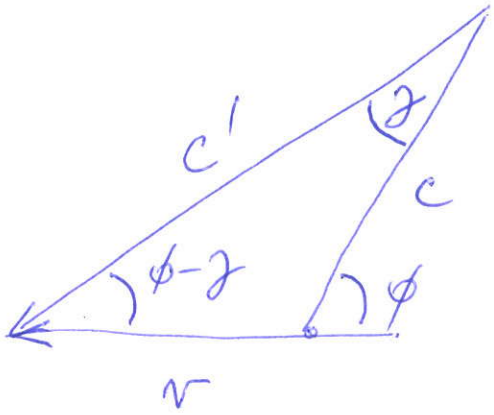
$$\sin \rho = \sin \pi \sin \beta$$



aberace úhlová



zdroj



pozorovatel

$$\frac{\sin\vartheta}{v} = \frac{\sin(\phi-\vartheta)}{c}$$

$$\sin\vartheta = \frac{v}{c}\left[\sin\phi\cos\vartheta - \cos\phi\sin\vartheta\right]$$

$\cos\vartheta \to 1$ $\qquad$ $\sin\vartheta \to \vartheta$

$\vartheta \ll 1$

$$\sin\vartheta = \frac{v}{c}\sin\phi$$