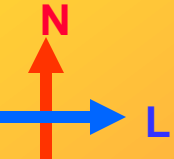
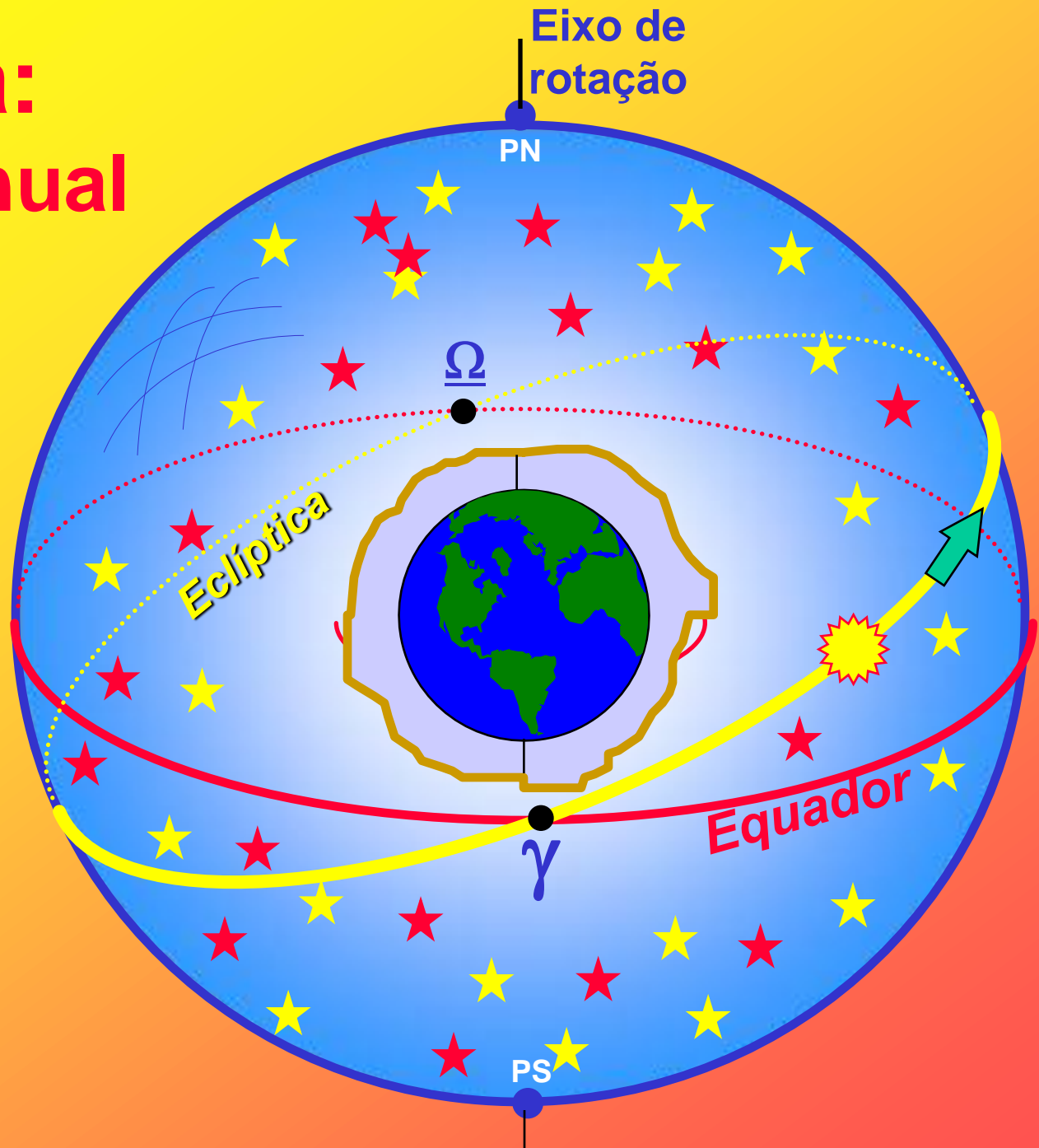


# Sistema Eclíptico

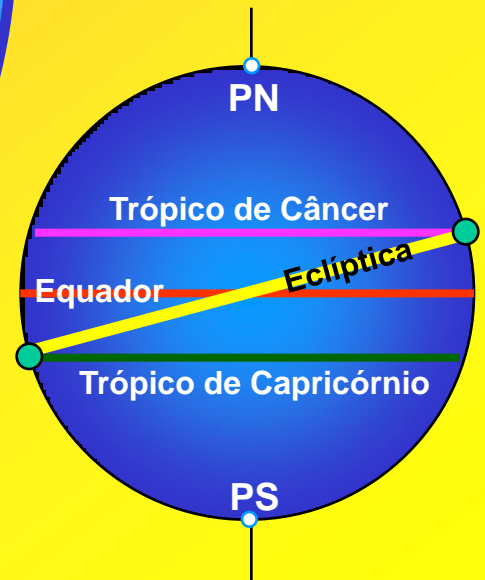
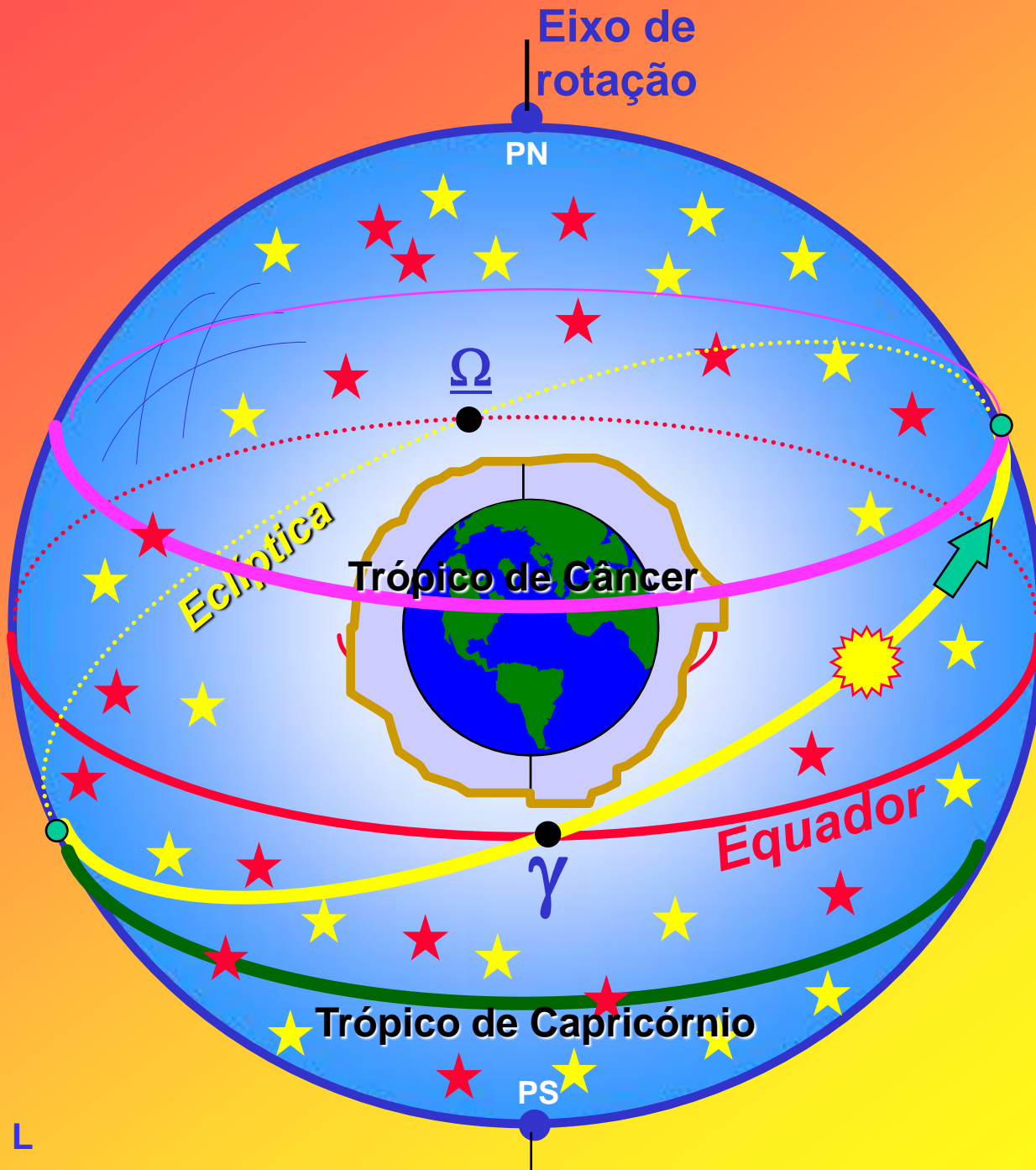
Prof. J. Meléndez, baseado/R. Boczko

IAG - USP

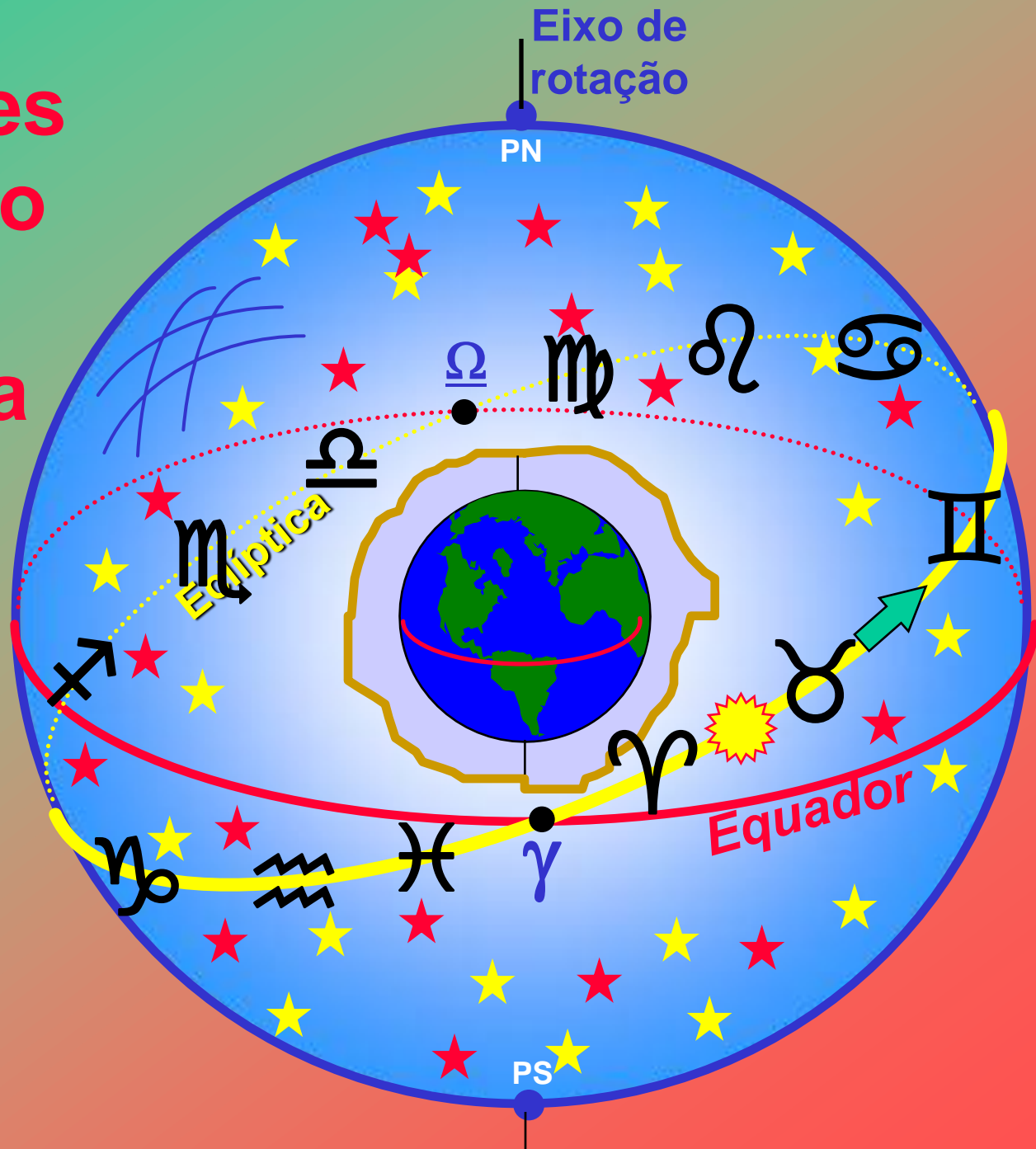
# Eclíptica: Trajetória anual aparente do Sol



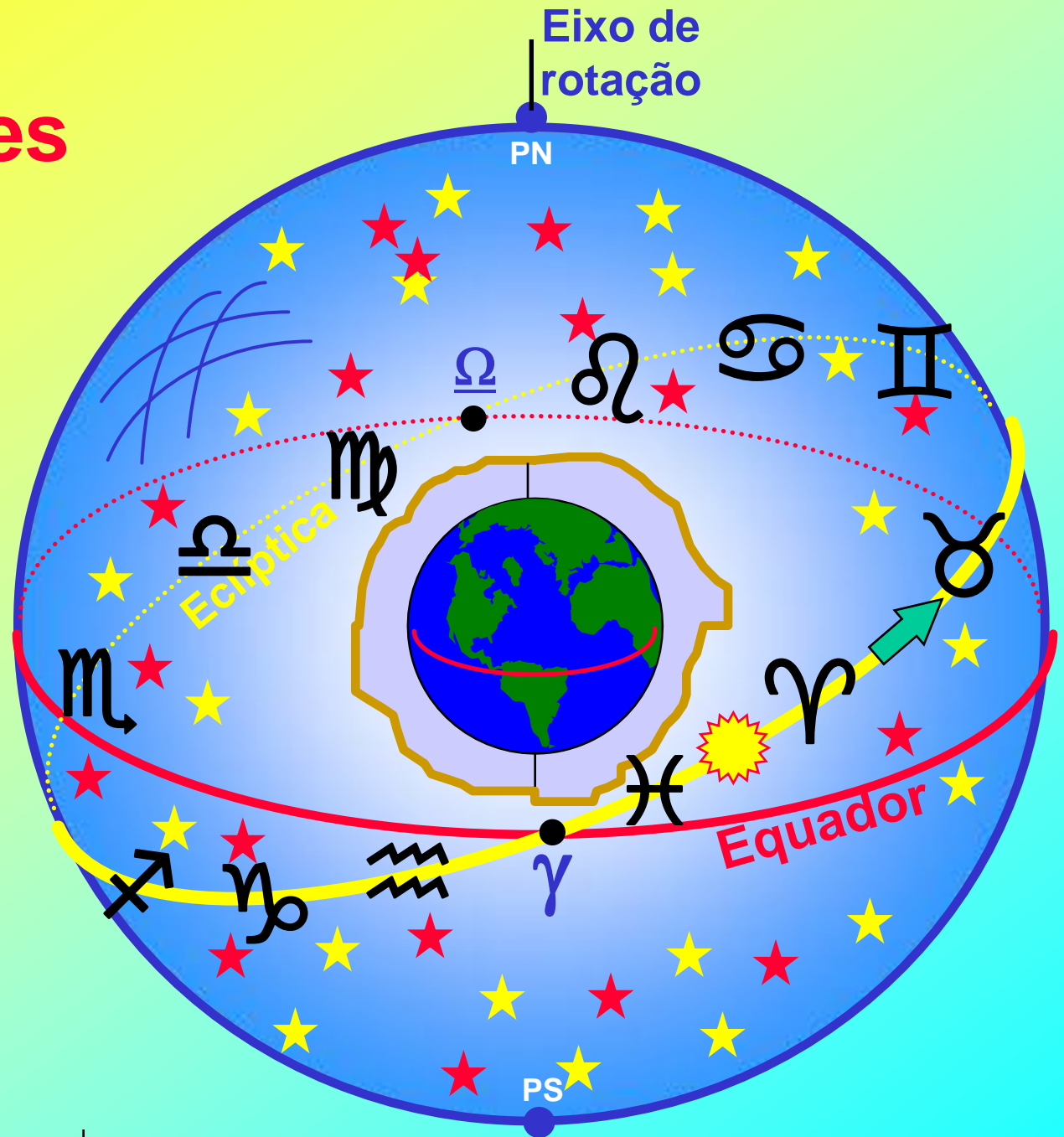
# Eclíptica e Trópicos



# Constelações zodiacais no início da Astronomia



# Constelações zodiacais atuais



# **Coordenadas eclípticas**

# Sistema Eclíptico

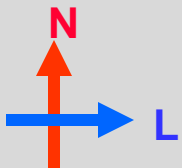
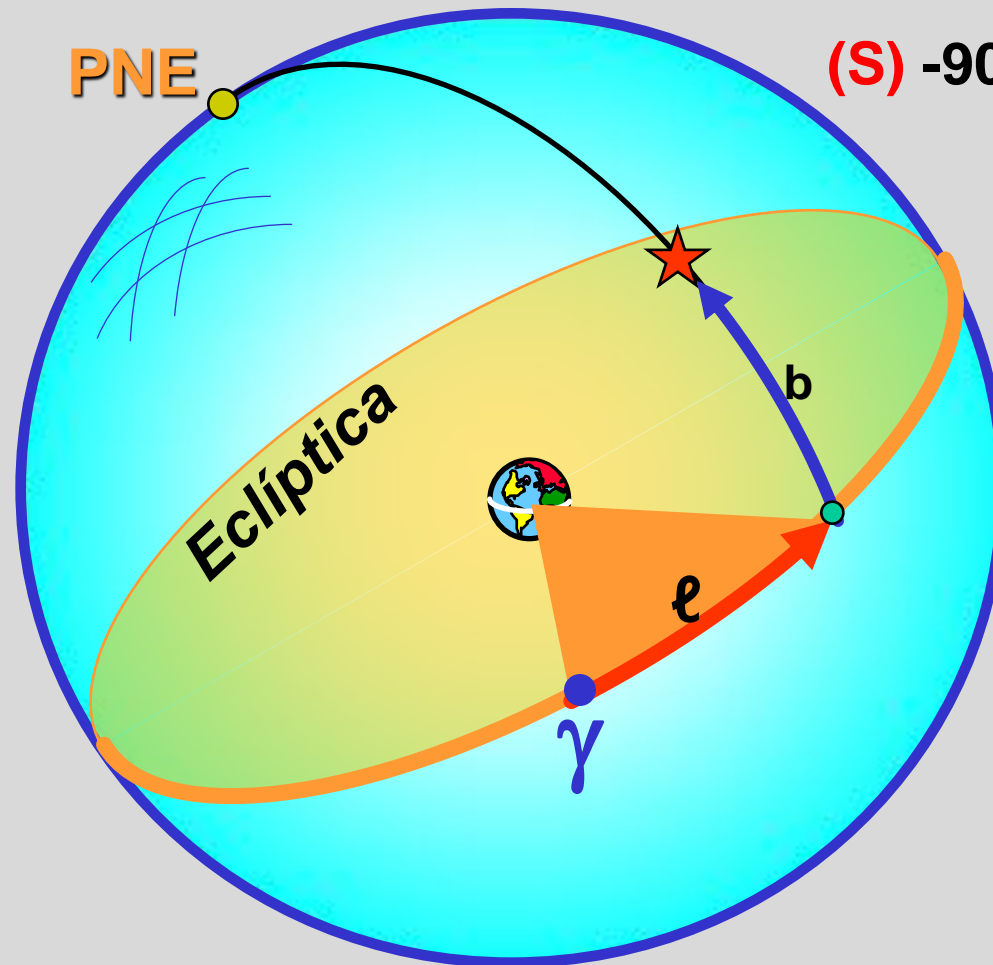
$\ell$  : longitude eclíptica

$b$  : latitudde eclíptica

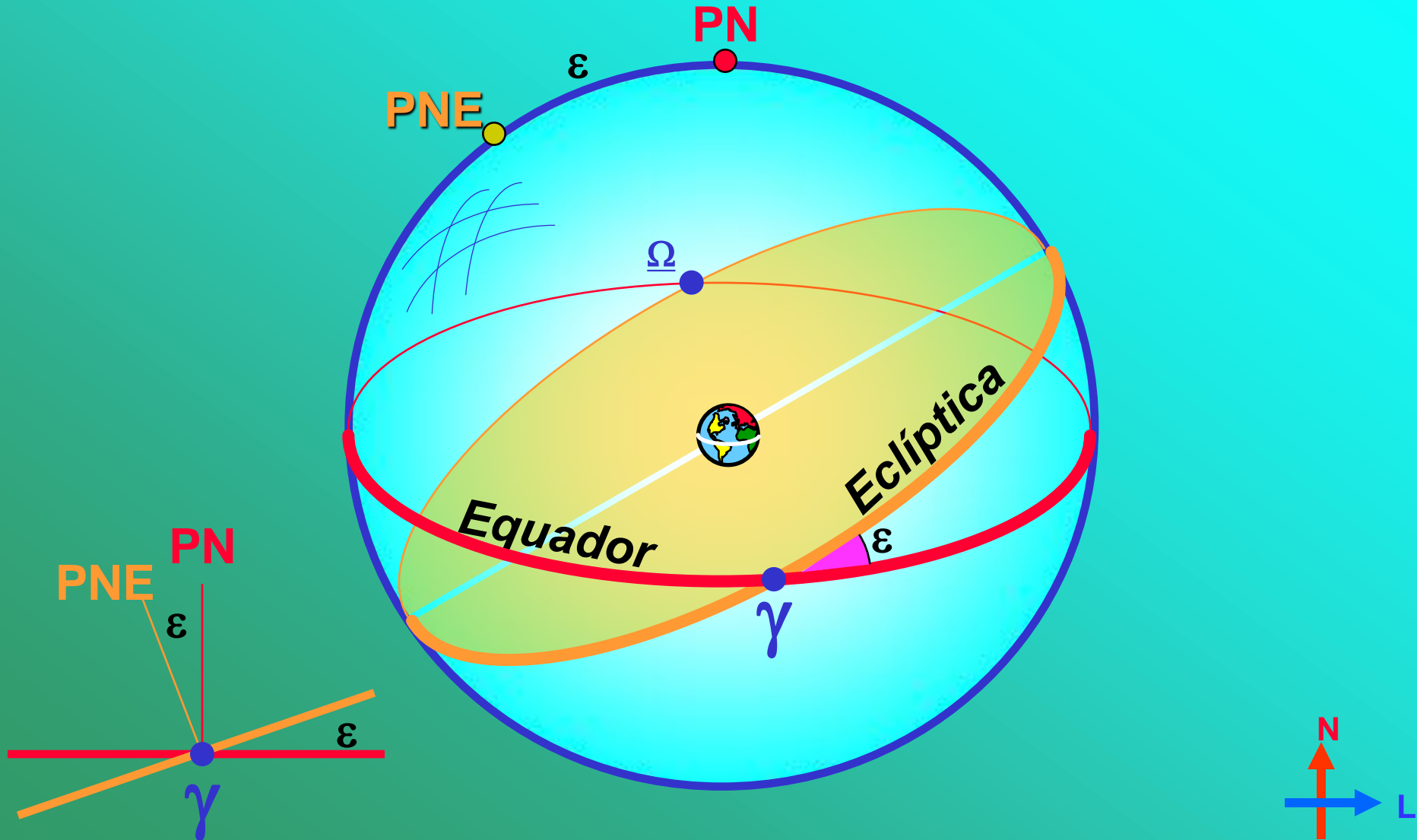
★  $(\ell, b)$

$$0^{\circ} \leq \ell < 360^{\circ}$$

$$(S) -90^{\circ} \leq b \leq +90^{\circ} (N)$$

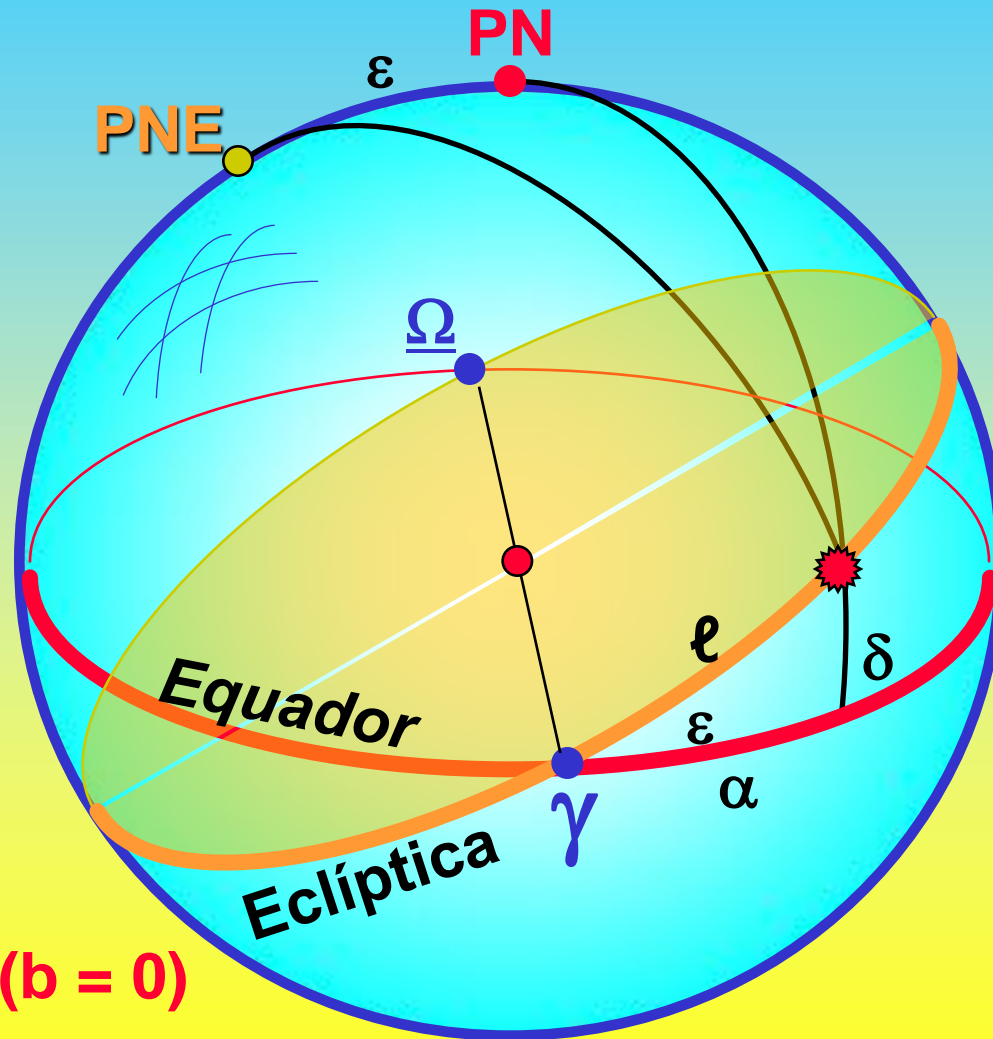


# Sistemas Equatorial e Eclíptico





# Coordenadas do Sol

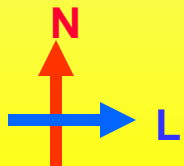


$$0^\circ \leq \ell < 360^\circ$$

$$b \equiv 0^\circ$$

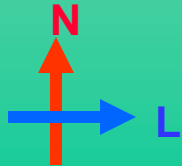
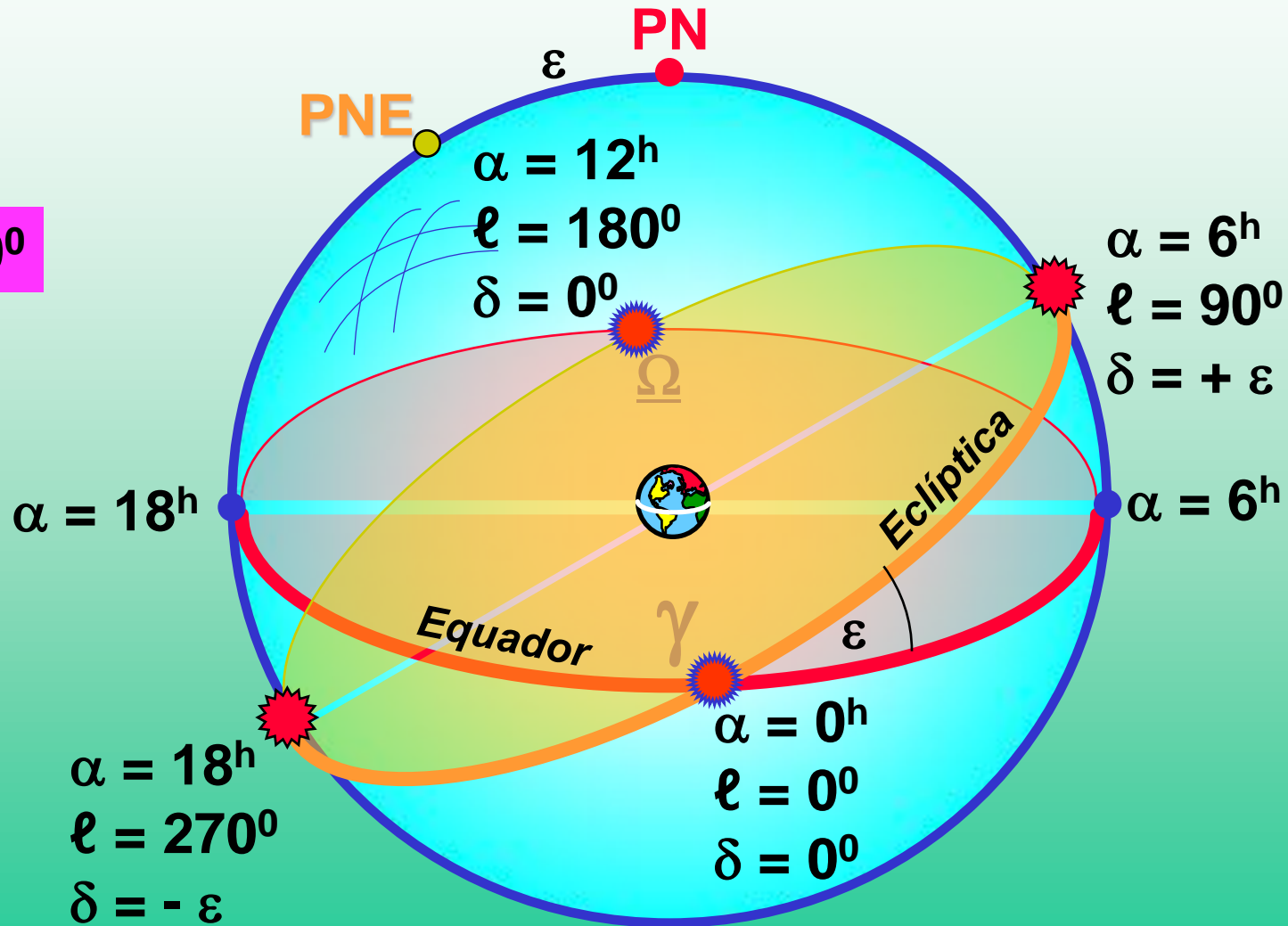
  $(\ell, b)$   $(b = 0)$

  $(\alpha, \delta)$

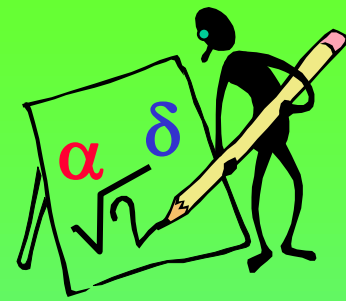


# Coordenadas particulares do Sol

$b \equiv 0^{\circ}$



# Coordenadas do Sol



## Enunciado:

Calcular as coordenadas eclípticas do Sol 100 dias depois de sua passagem pela primavera boreal. Supor movimento circular uniforme na eclíptica com período de 365d05h48m46s?

$$T = 365\text{d}05\text{h}48\text{m}46\text{s} = 365 + (05/24) + (48/60/24) + (46/60/60/24) = 365,242199 \text{ dias}$$

$$\Delta T = 100 \text{ dias}$$

365,242199 d	$\Rightarrow$	360°
100 d	$\Rightarrow$	L

$$b \equiv 0^\circ$$

$$L = 100 * 360 / 365,242199$$

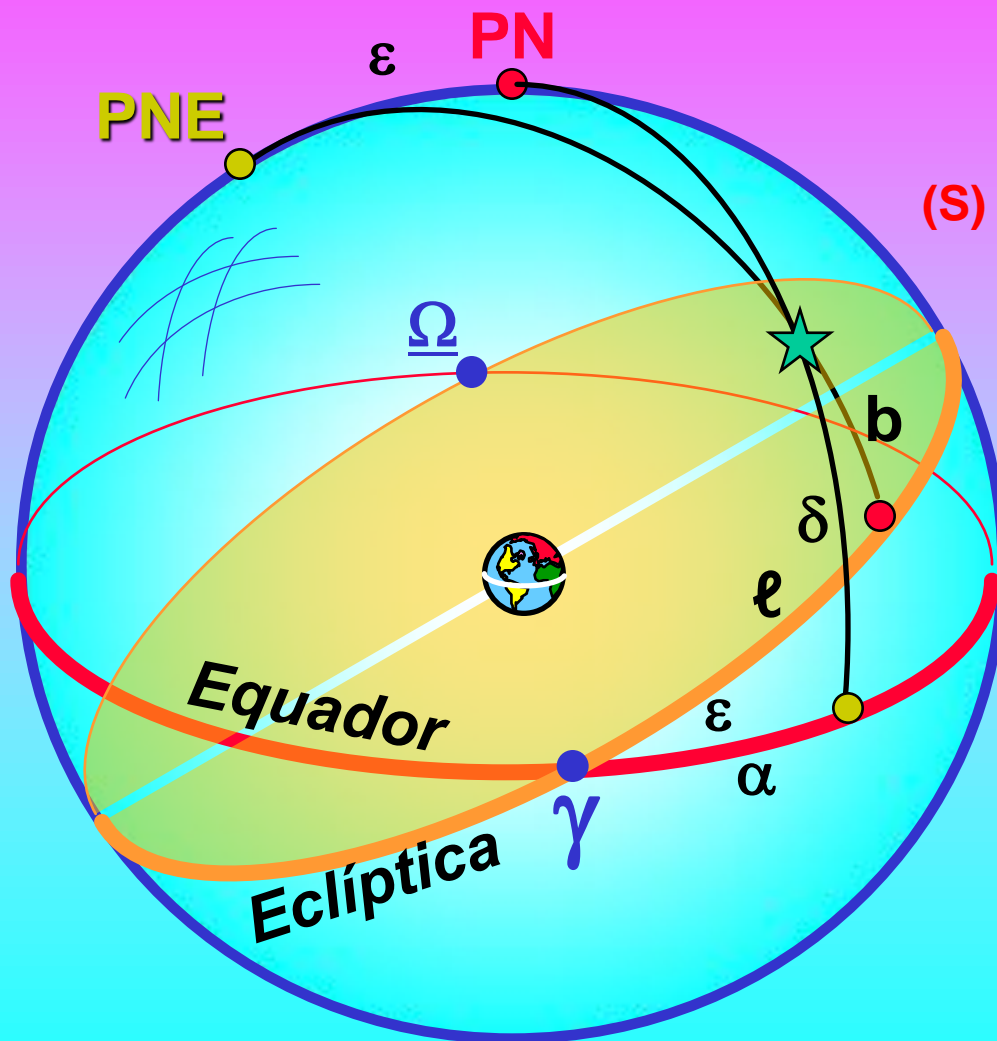
$$L \cong 98,564735^\circ$$

$$L \cong 98^\circ 33' 53''$$

# Coordenadas de uma estrela

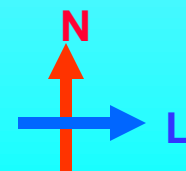
★  $(\ell, b)$

★  $(\alpha, \delta)$



$$0^{\circ} \leq \ell < 360^{\circ}$$

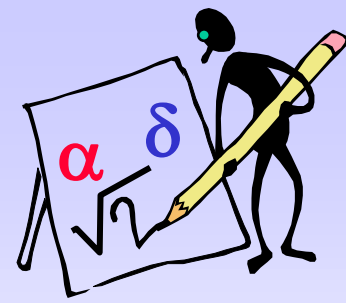
$$(S) -90^{\circ} \leq b \leq +90^{\circ} (N)$$



**Constelações pelas  
quais o Sol passa**

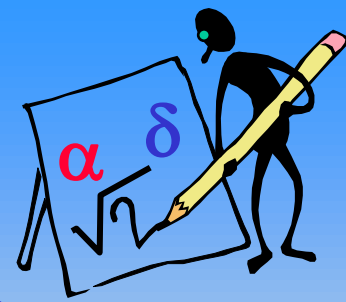






# Posição da eclíptica

# Posição da eclíptica



## Enunciado:

Que ângulo a eclíptica forma com o horizonte de um observador com latitude  $50^\circ$  no instante do ocaso do Ponto Gama?

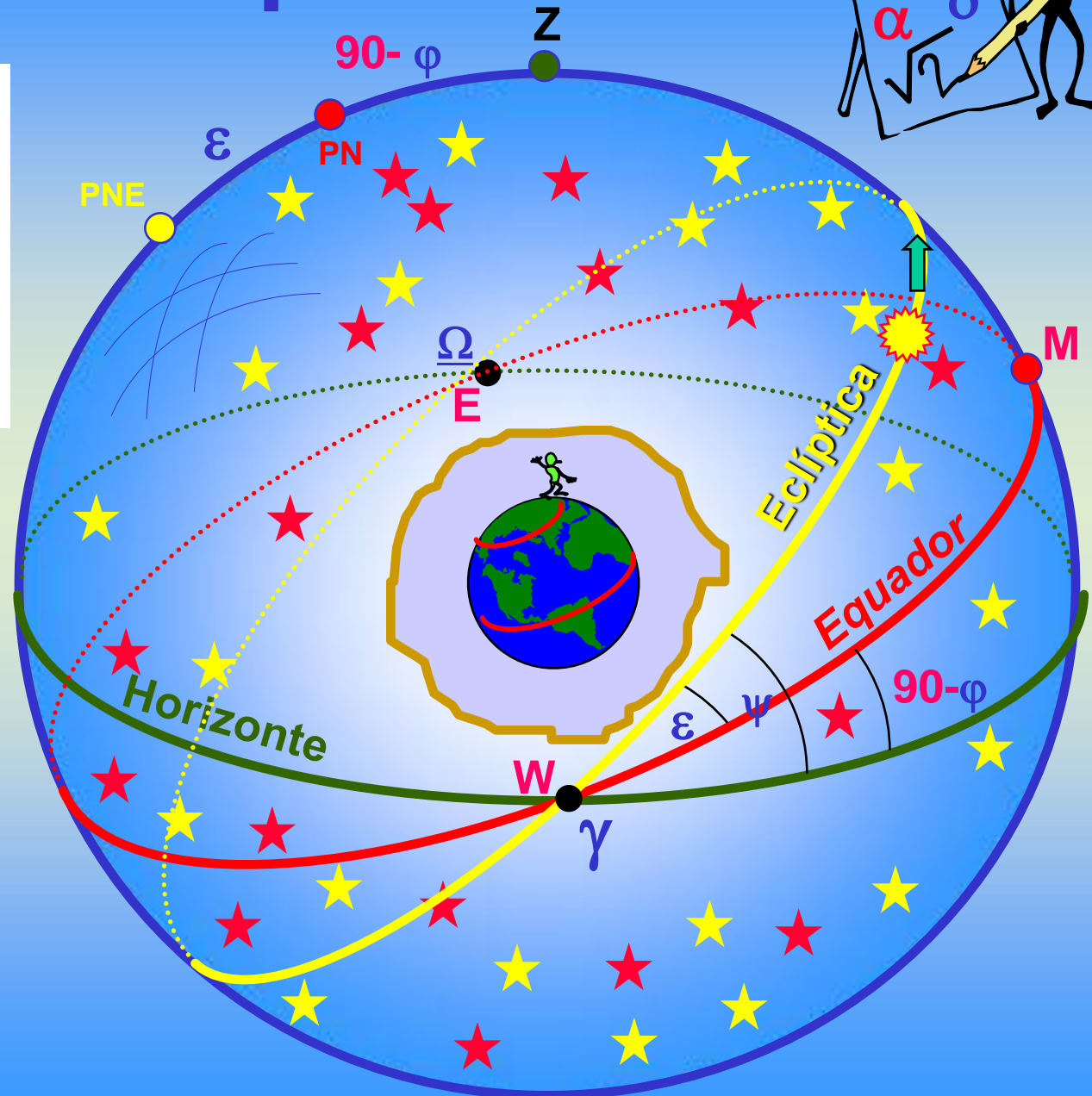
Pela figura:

$$\psi = (90^\circ - \varphi) + \varepsilon$$

N

$$\psi = (90^\circ - 50^\circ) + 23,5^\circ$$

$$\psi = 63,5^\circ$$





Film