Astronomia de Posição
2º semestre - 2023

Aula_10 – 20/09/2023

Sistemas de Coordenadas

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Gaia/ESA/DPAC

sistema de coordenadas equatorial horário

δ = declinação

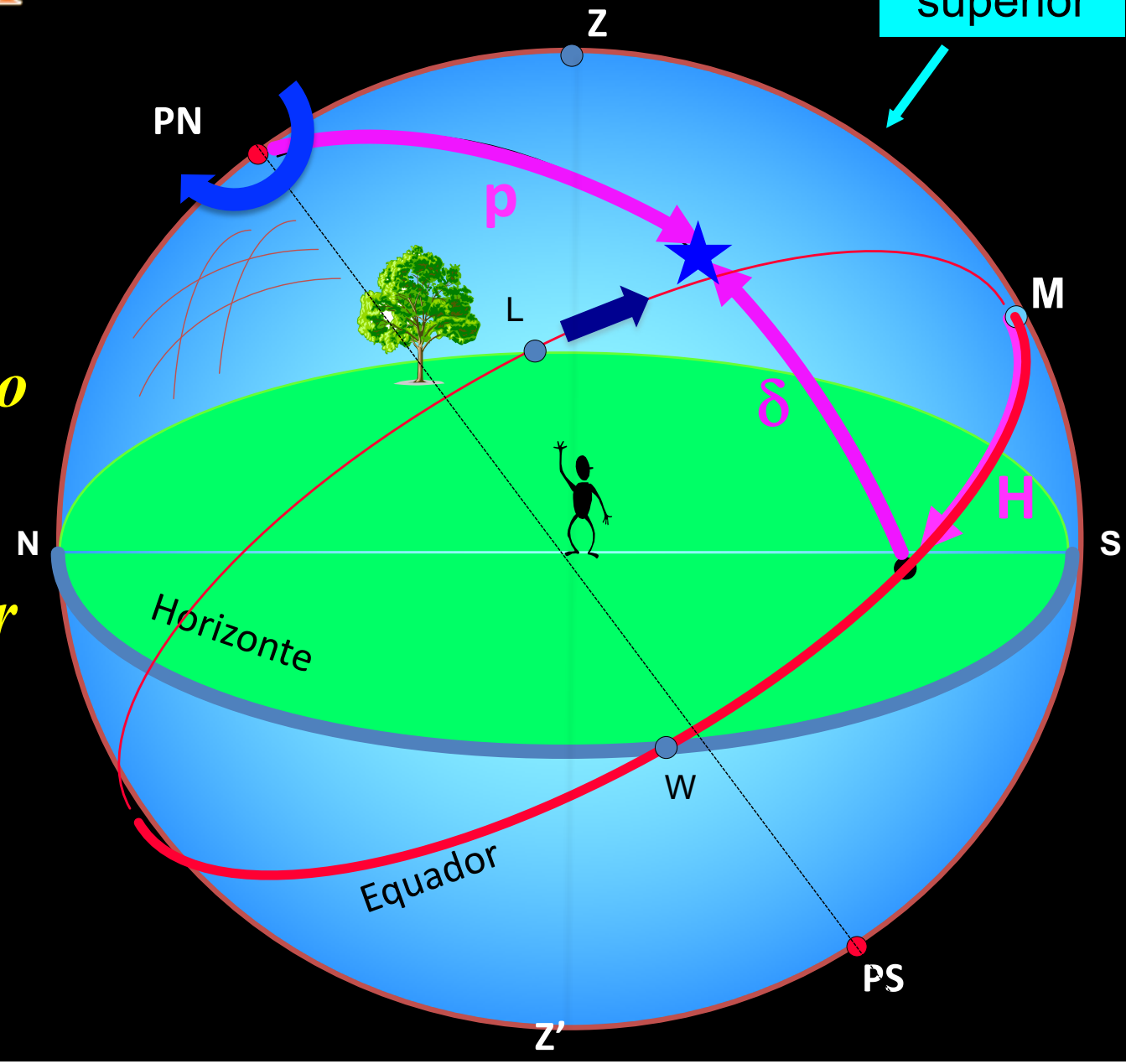
$-90^o \leq \delta \leq 90^o$

H = ângulo horário

$0^h \leq H \leq 24^h$

p = distância polar

$0^o \leq p \leq 180^o$



Adaptado de R. Boczko

sistema de coordenadas equatorial horário

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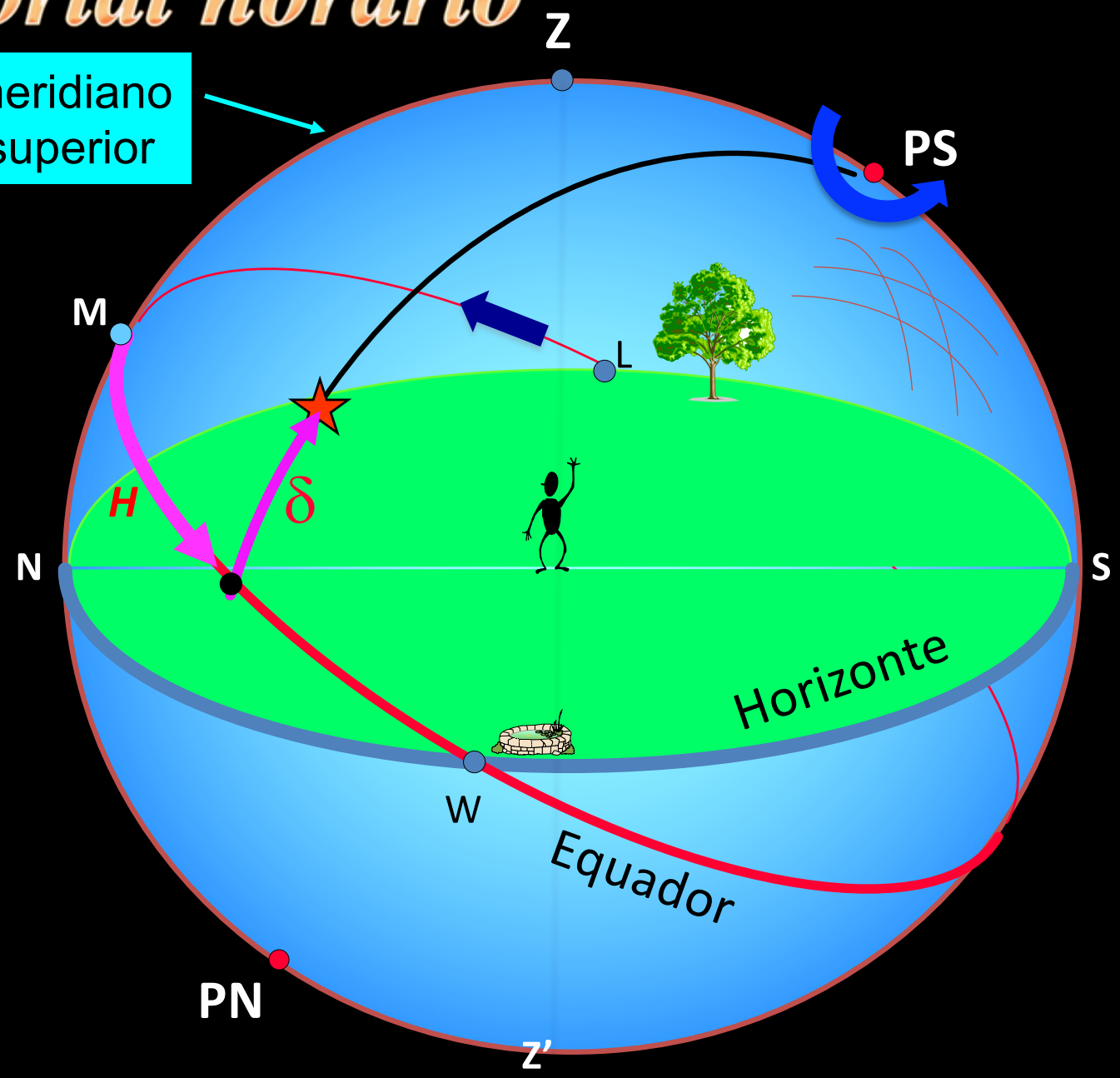
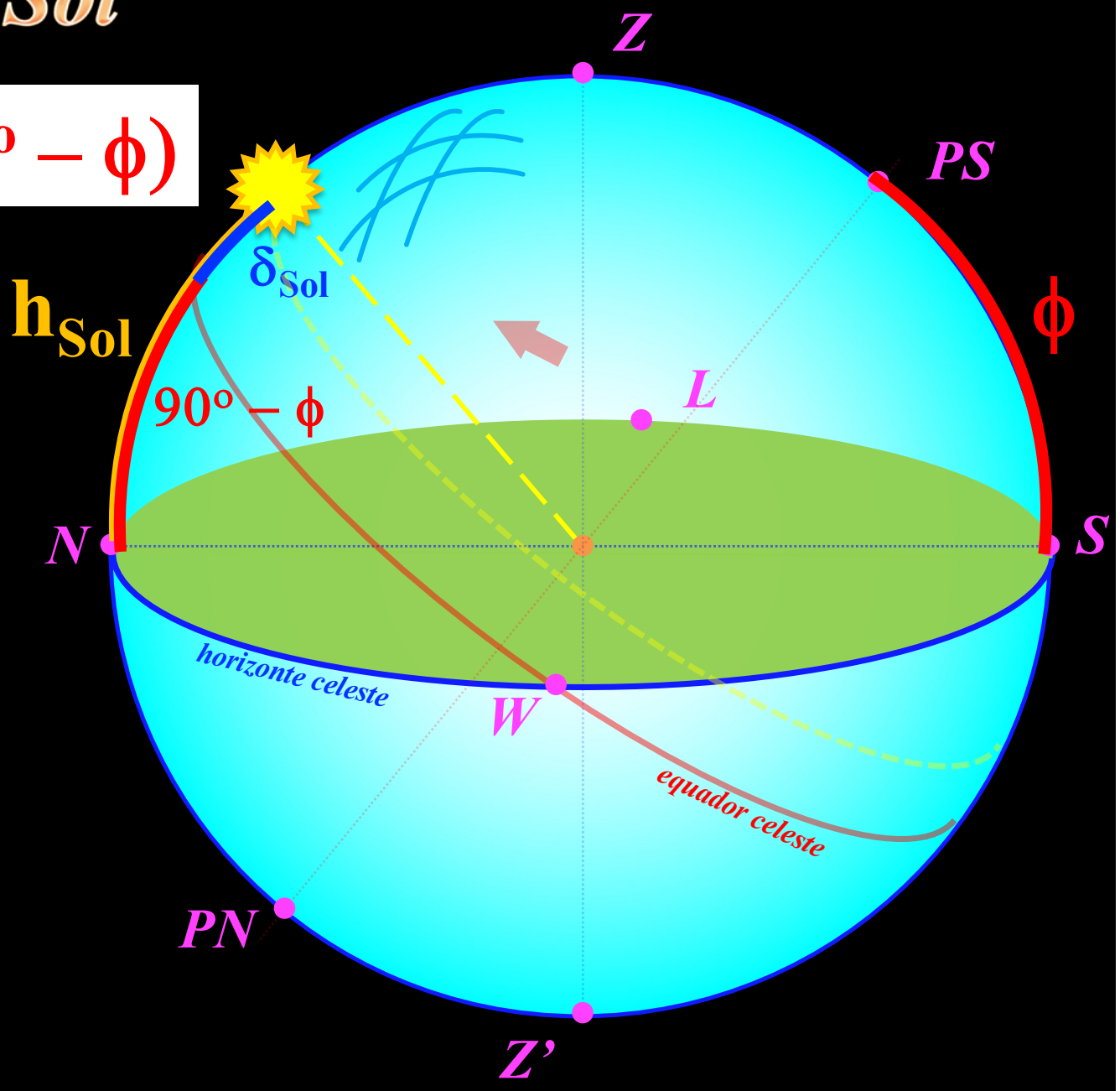


Adaptado de R. Boczko

determinação da declinação do Sol

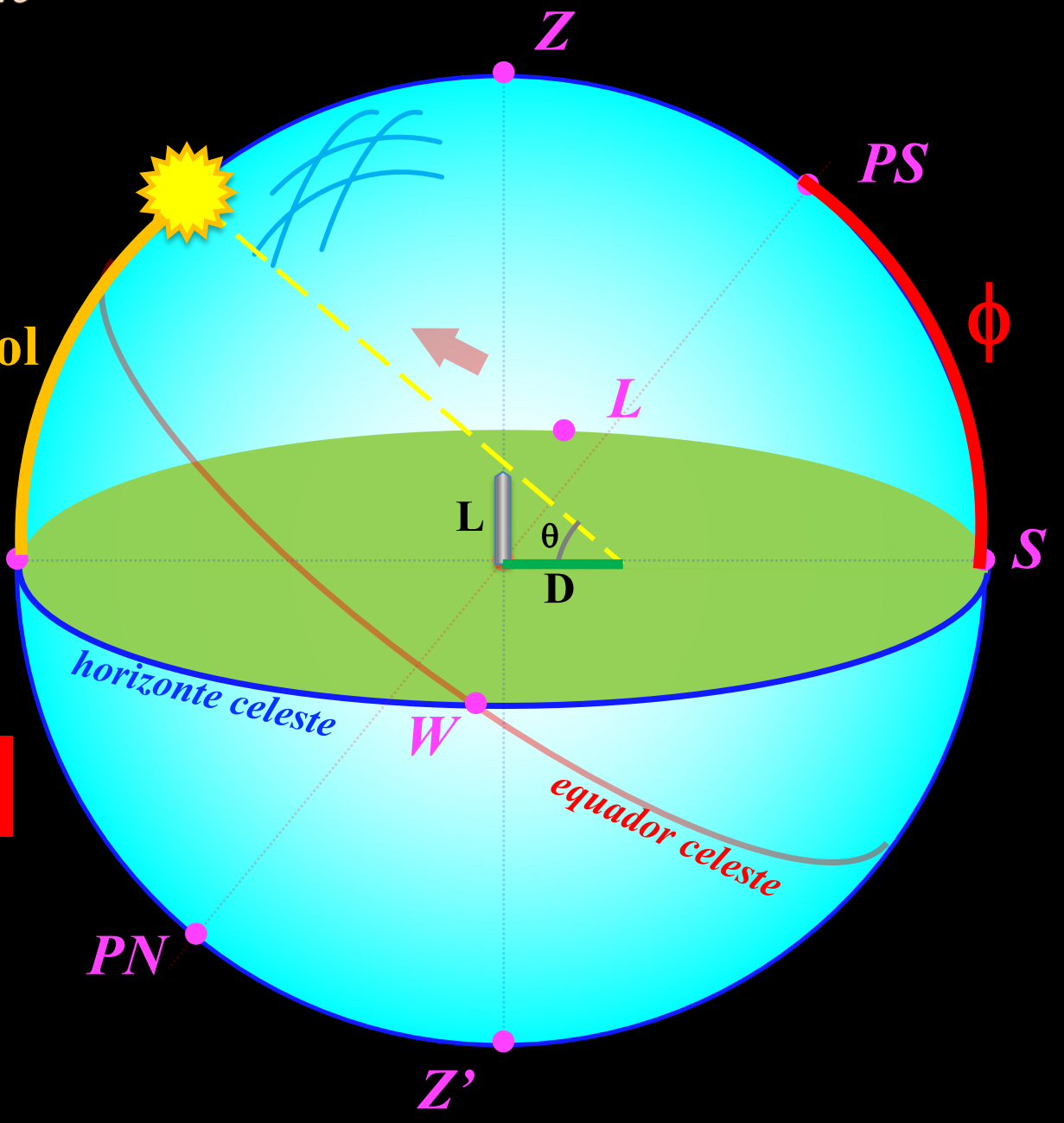
$$\delta_{Sol} = h_{Sol} - (90^o - \phi)$$



determinação da altura do Sol em culminação

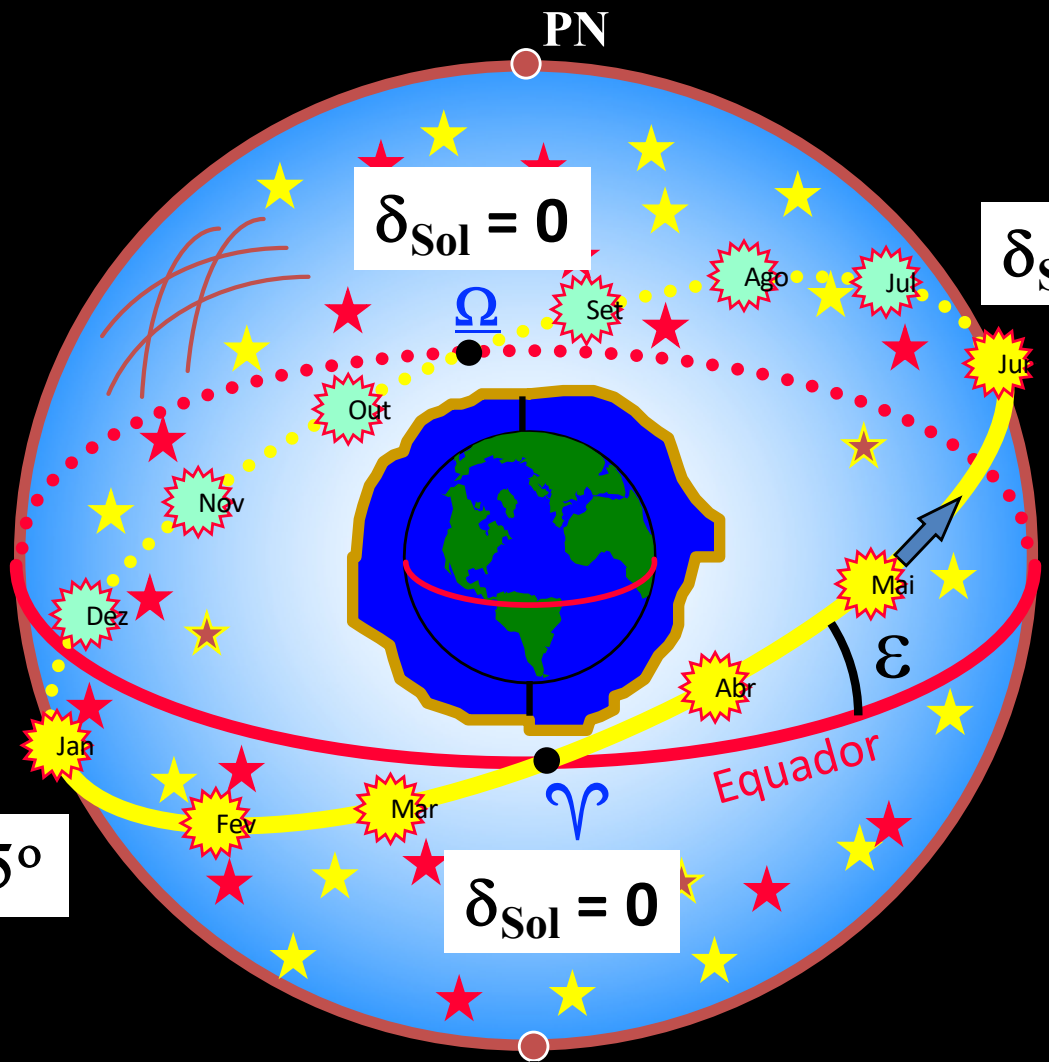
Altura do Sol
($h_{Sol} = \theta$)

h_{Sol}



$\theta = h_{Sol} = \text{arctg}\ (L/D)$

movimento annual aparente do Sol em declinação

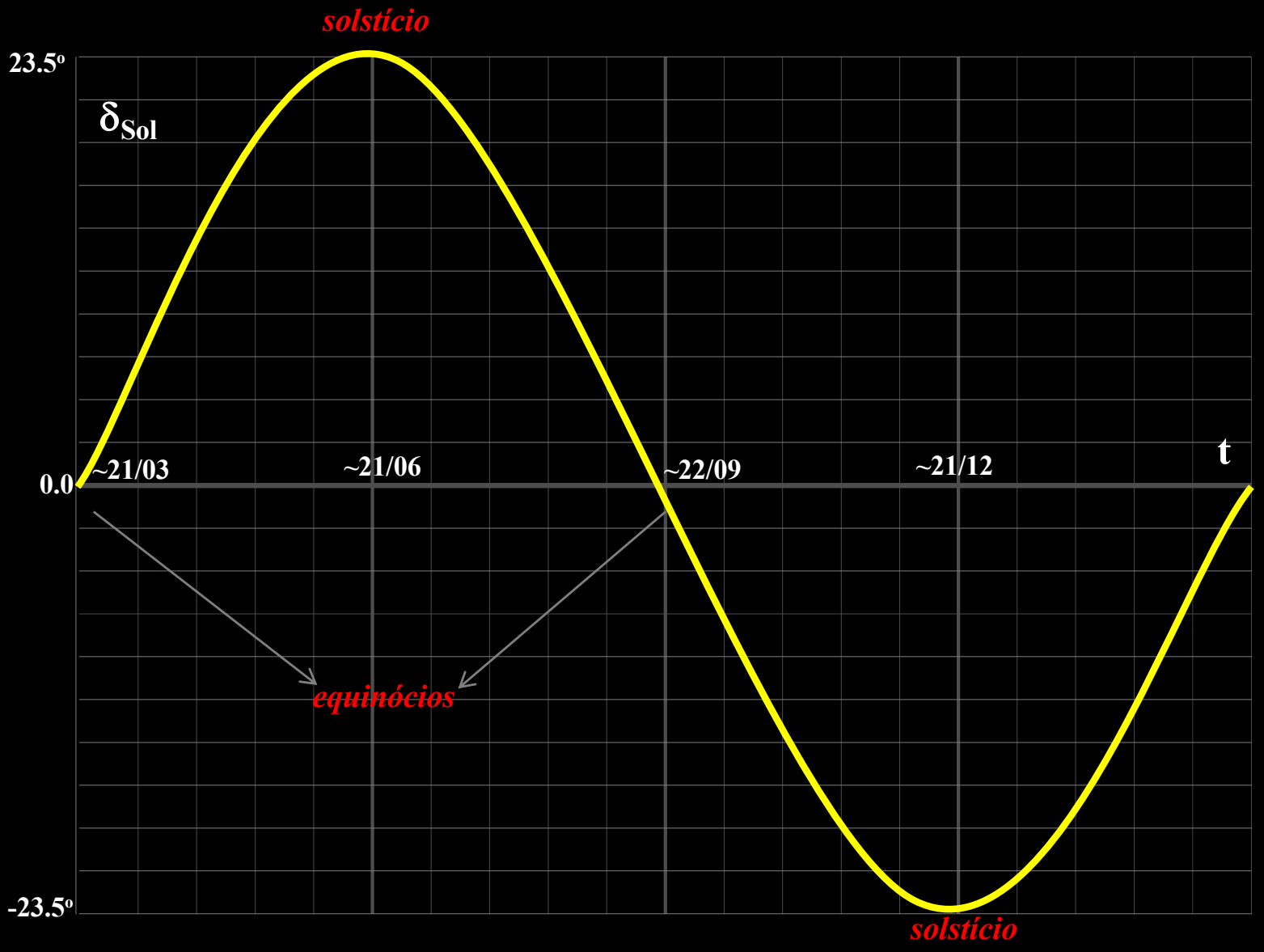


$\delta_{Sol} = + \varepsilon = 23,5^{o}$

$\delta_{Sol} = - \varepsilon = - 23,5^{o}$

Adaptado de R. Boczko

movimento annual aparente do Sol em declinação



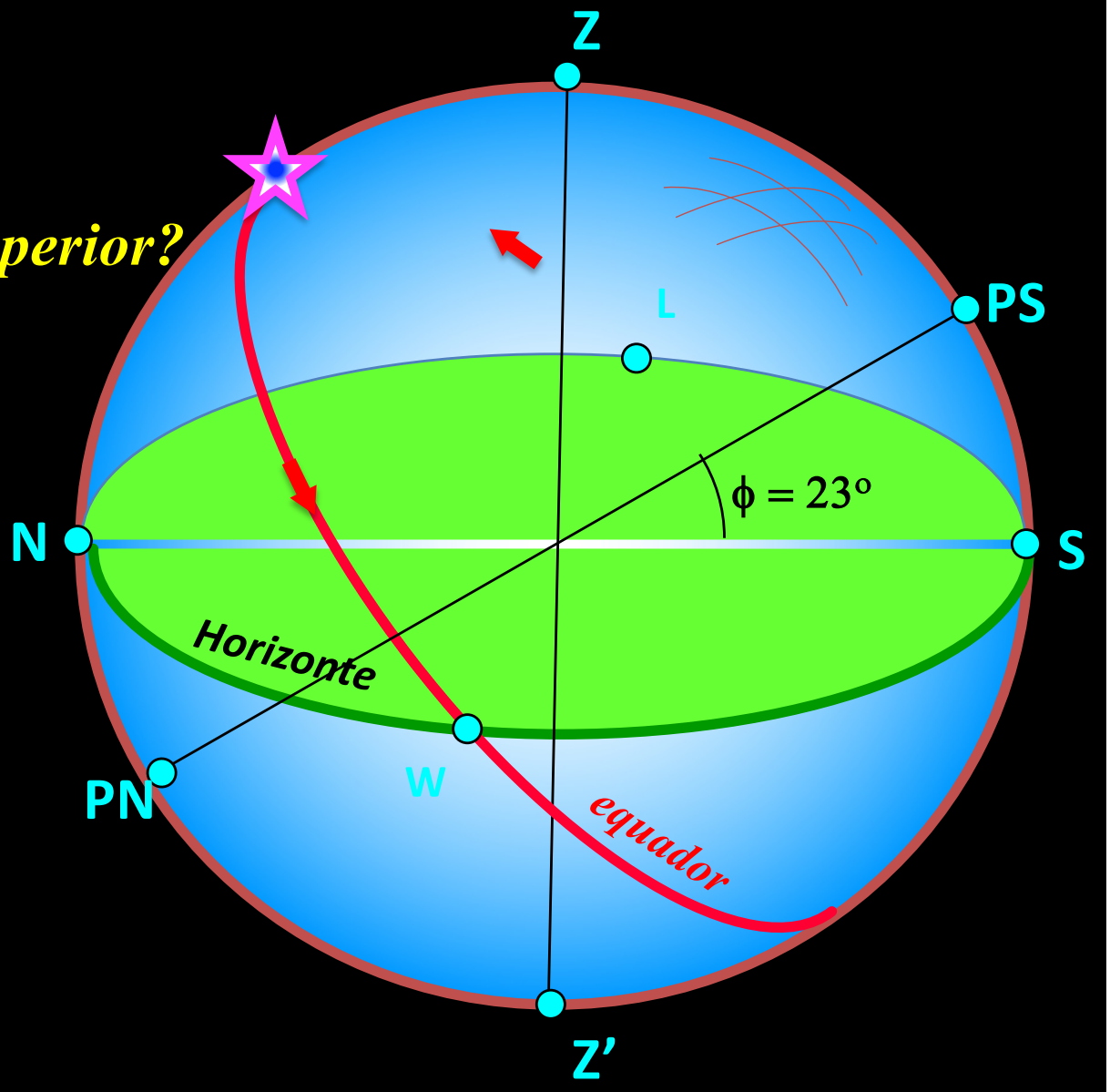
Adaptado de R. Boczko

Solução 01

$\delta = 0^o$

a) Astro em culminação superior?

$H = 0^h$ ou 0^o

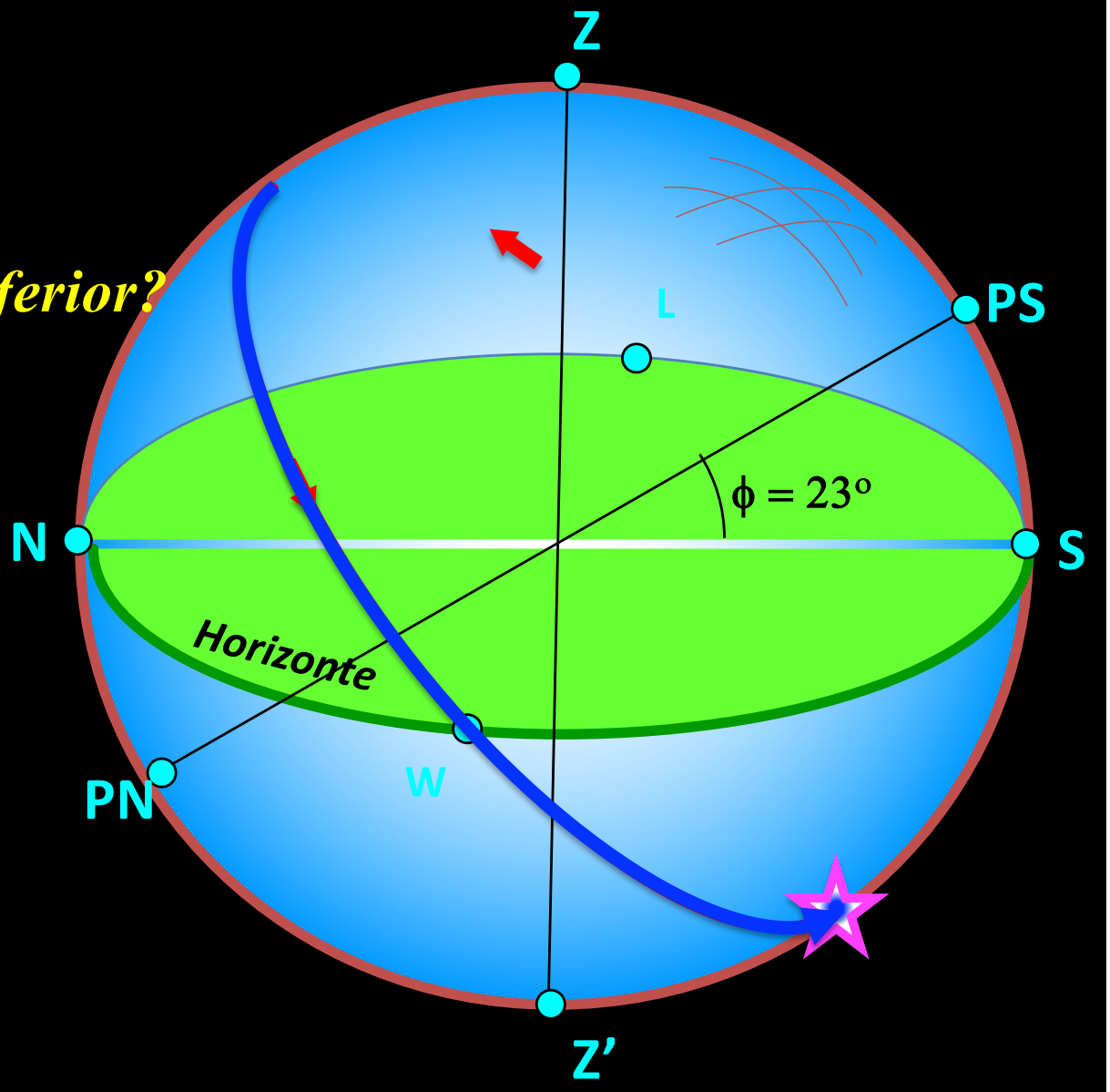


Solução 01

$\delta = 0^o$

b) Astro em culminação inferior?

$H = 12^h$ ou 180^o

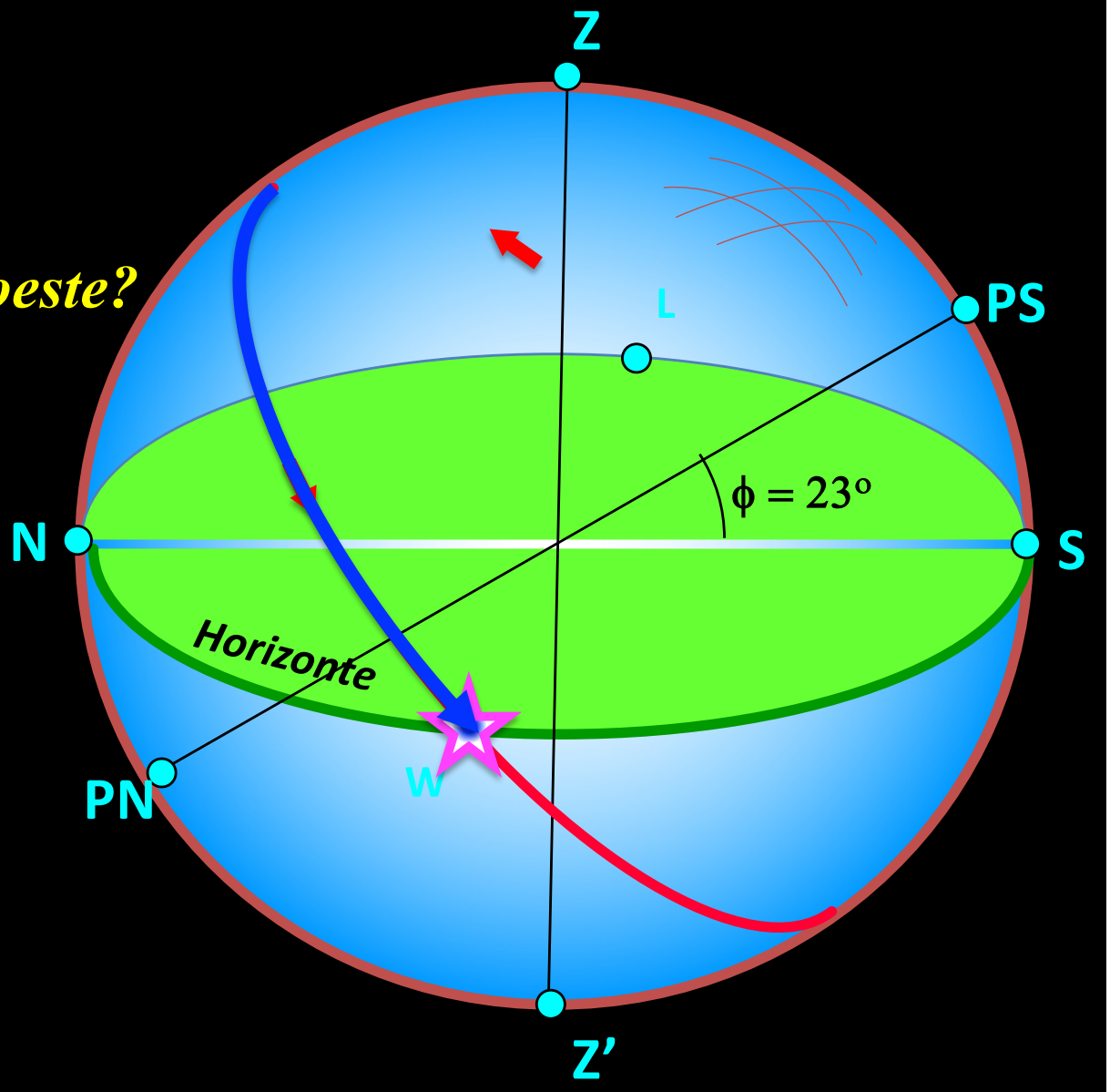


Solução 01

$\delta = 0^o$

c) Astro no ponto cardeal oeste?

$H = 06^h$ ou 90^o

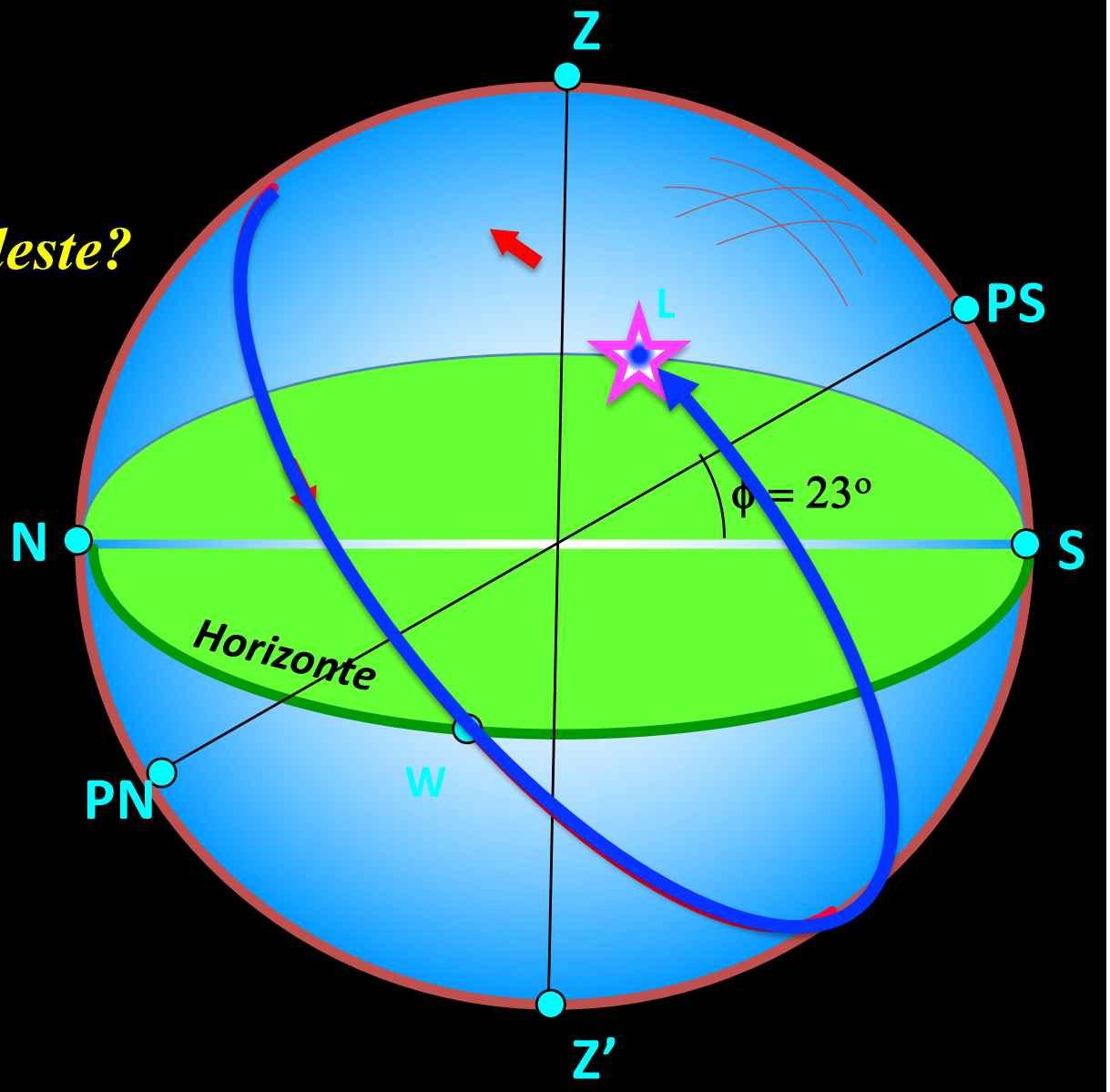


Solução 01

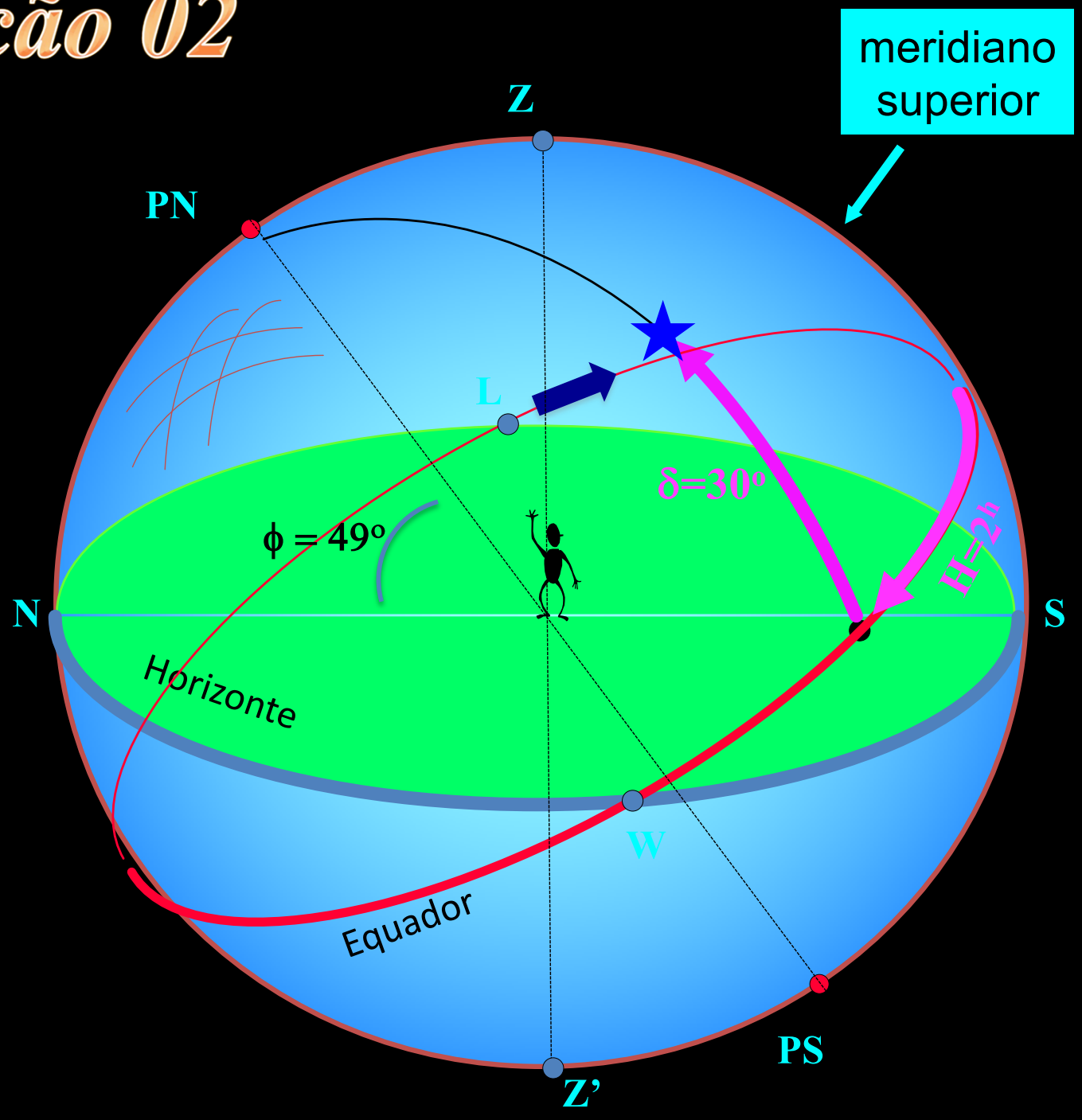
$\delta = 0^o$

c) Astro no ponto cardeal leste?

$H = 18^h$ ou 270^o



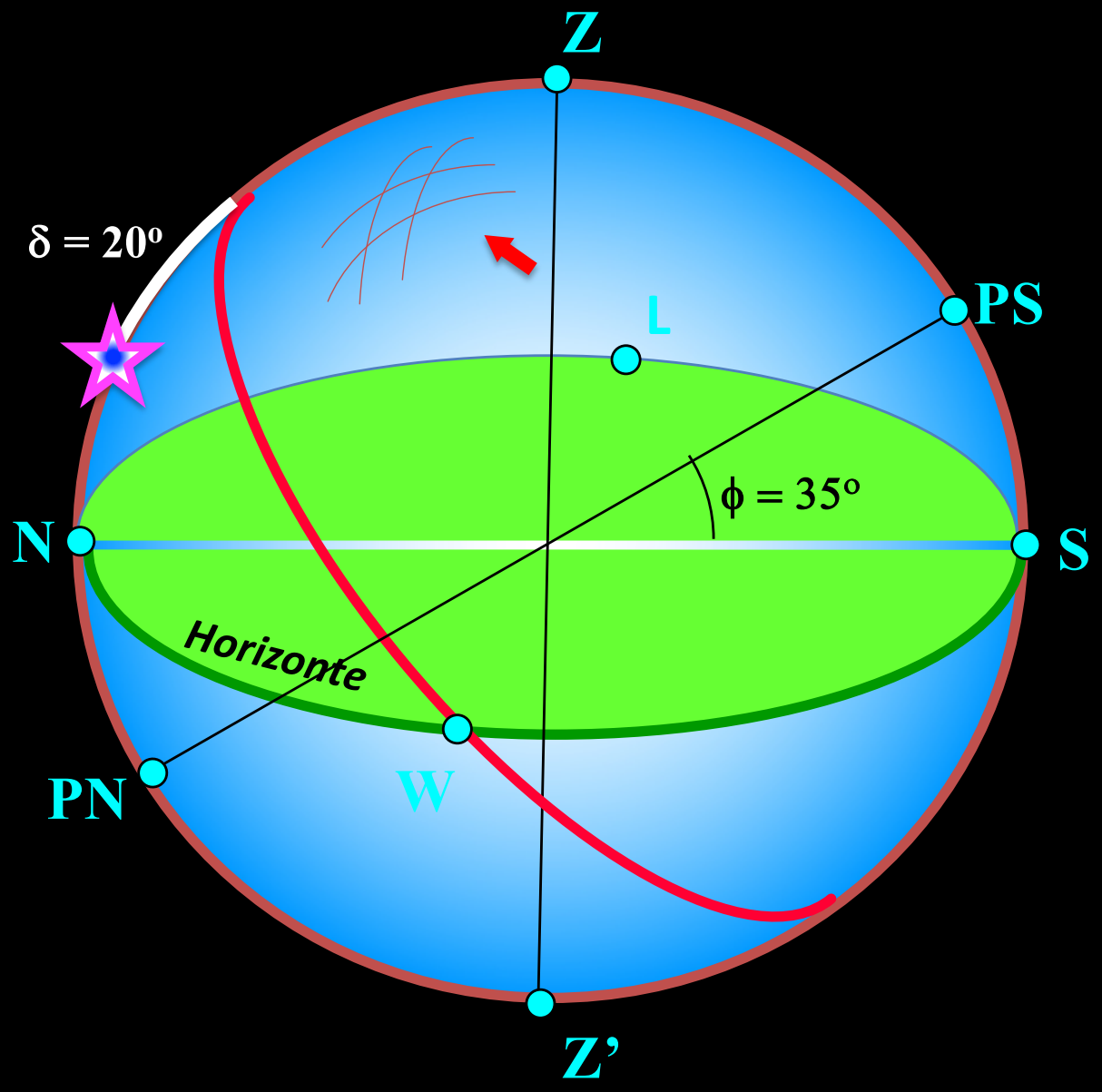
Solução 02



Adaptado de R. Boczko

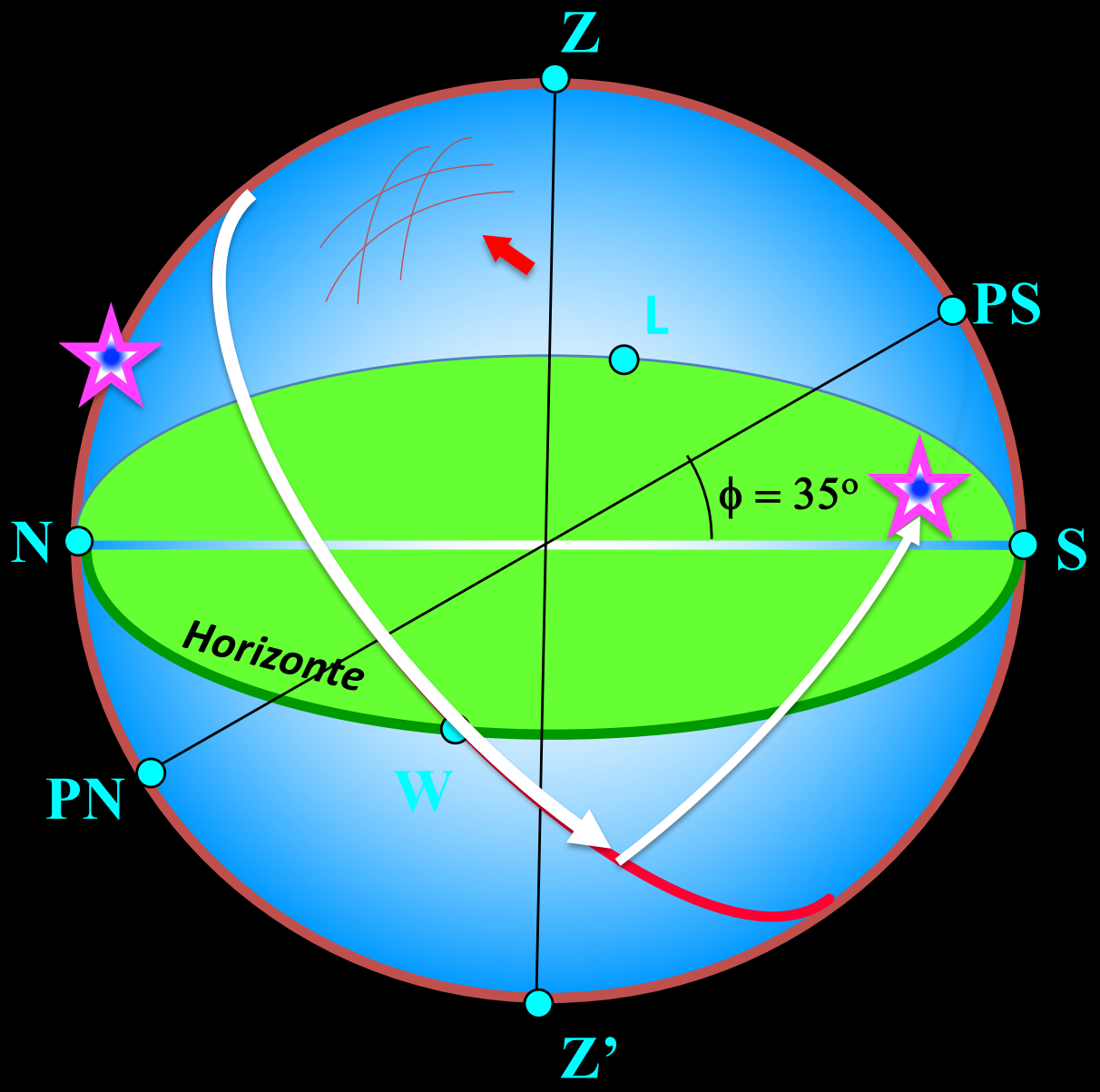
Solução 03

a) $\delta = 20^o$, $H = 0^h$



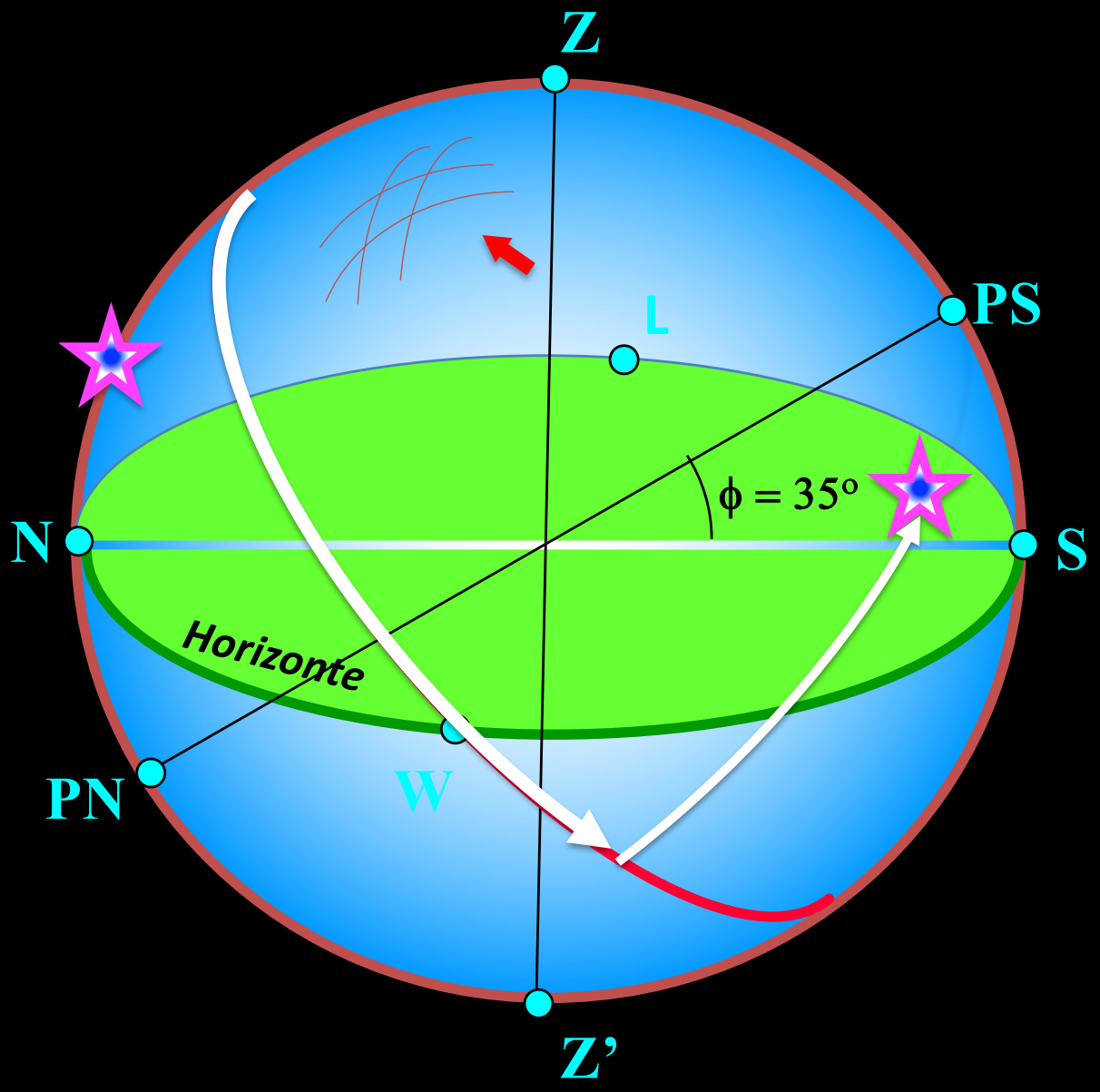
Solução 03

a) $\delta = -60^o$, $H = 8^h$



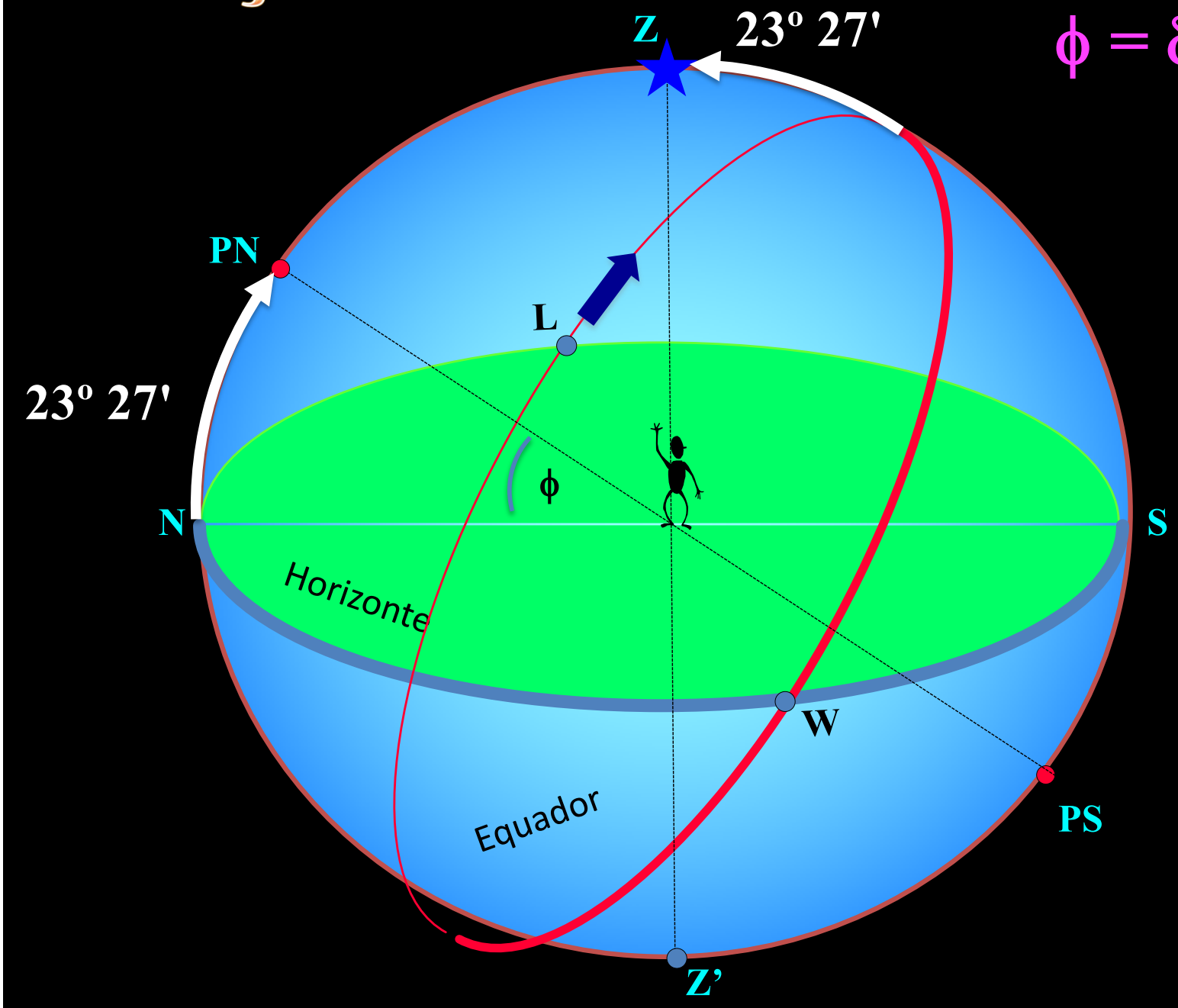
Solução 03

a) $\delta = -60^o$, $H = 8^h$



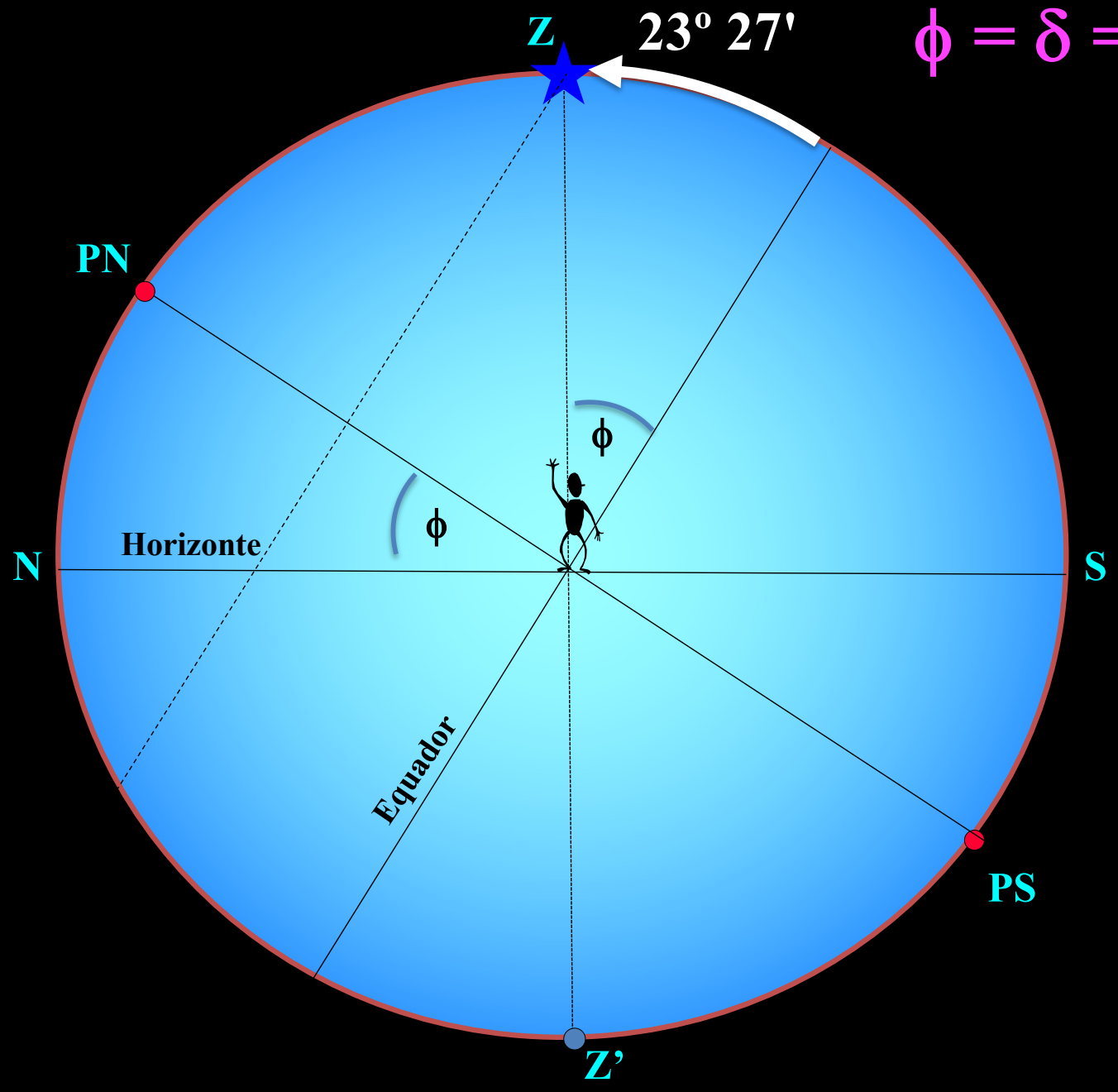
Solução 04

$\phi = \delta = 23^o\ 27'$



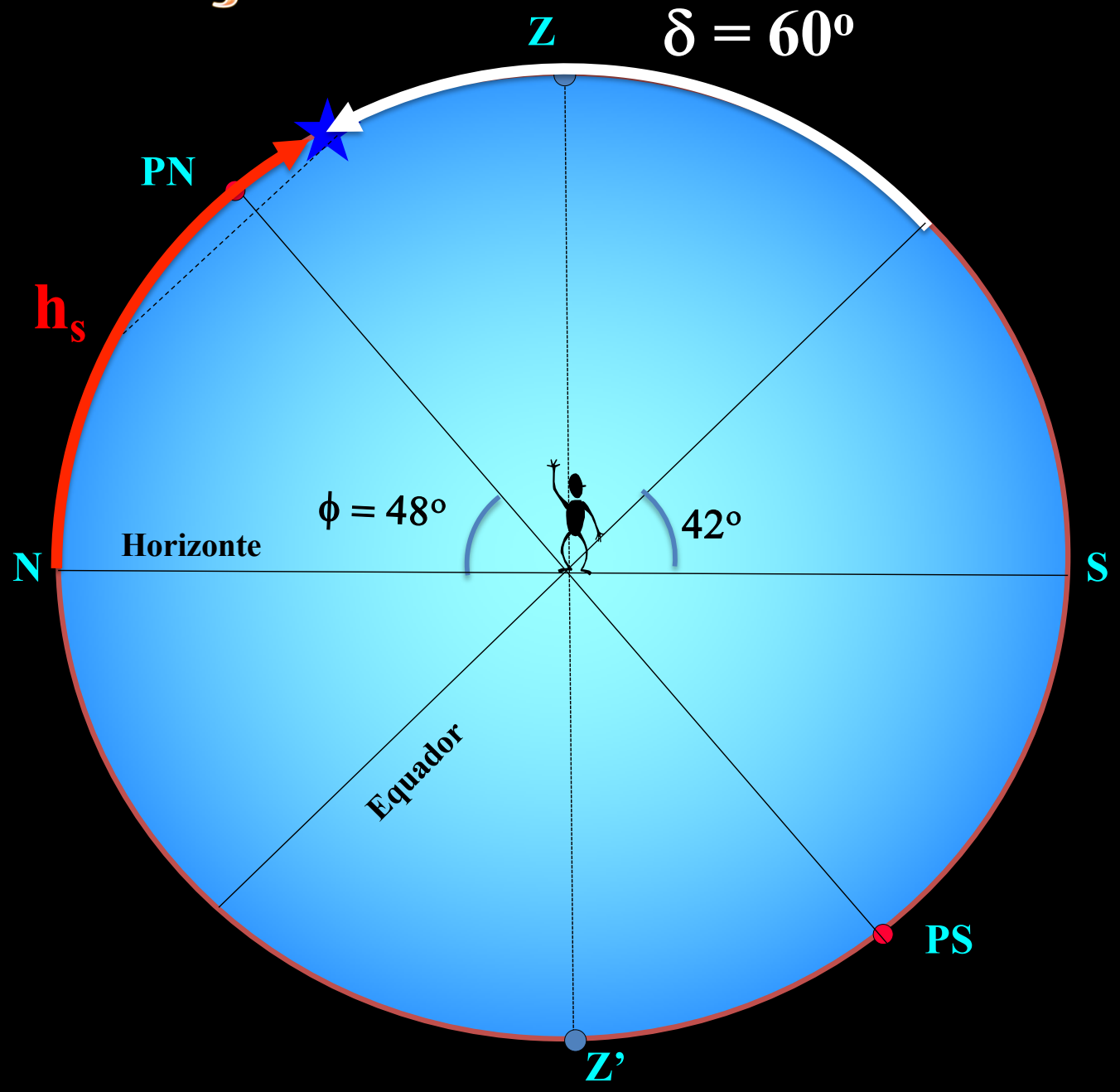
Adaptado de R. Boczko

Solução 04



$\phi = \delta = 23^{o}\ 27'$

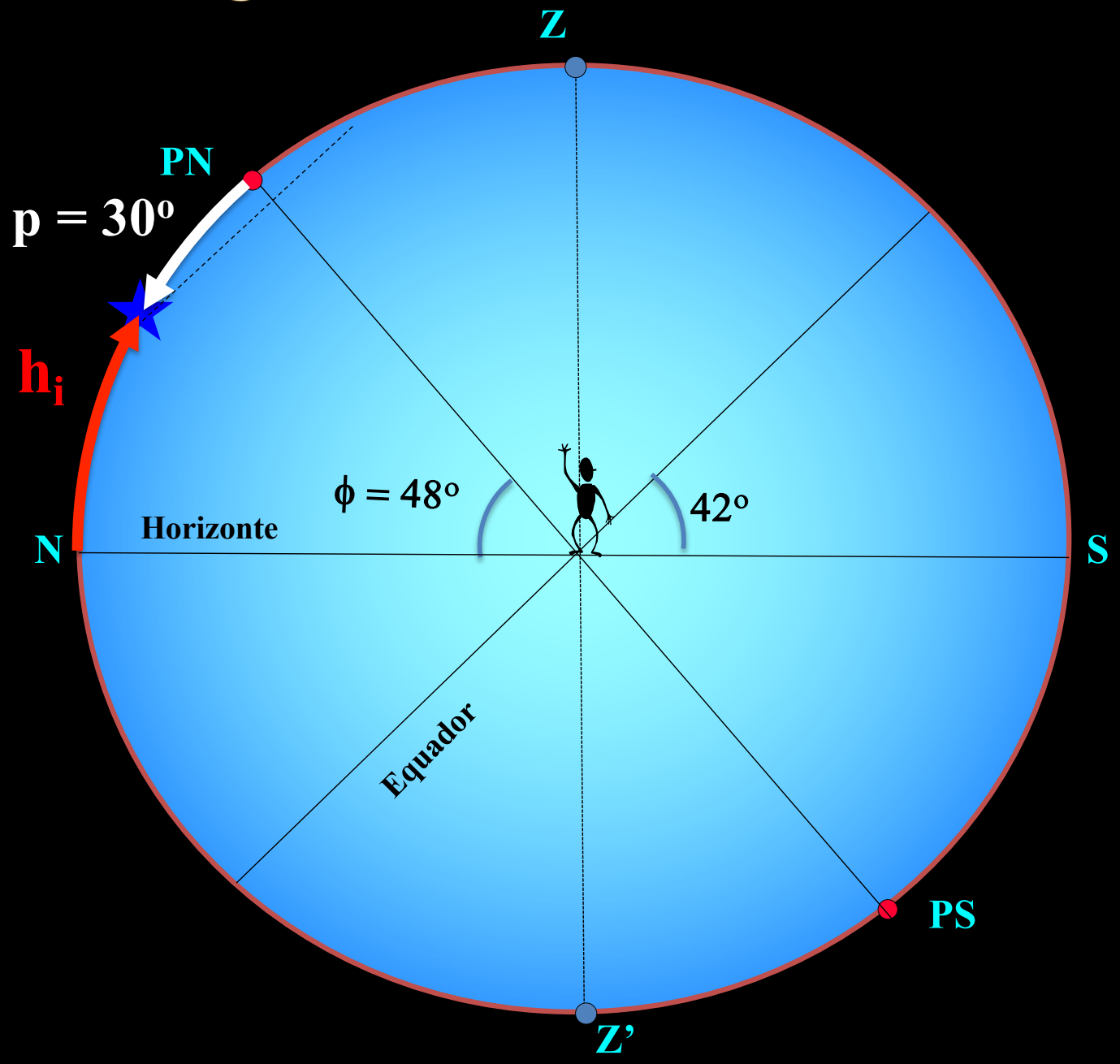
Solução 05



$h_s + 60^o = 138^o$

$h_s = 78^o$

Solução 05



$h_i + 30º = 48º$

$h_i = 18º$

Solução 06

$\phi = 0^o$

$\varepsilon = 23^o\ 27'$

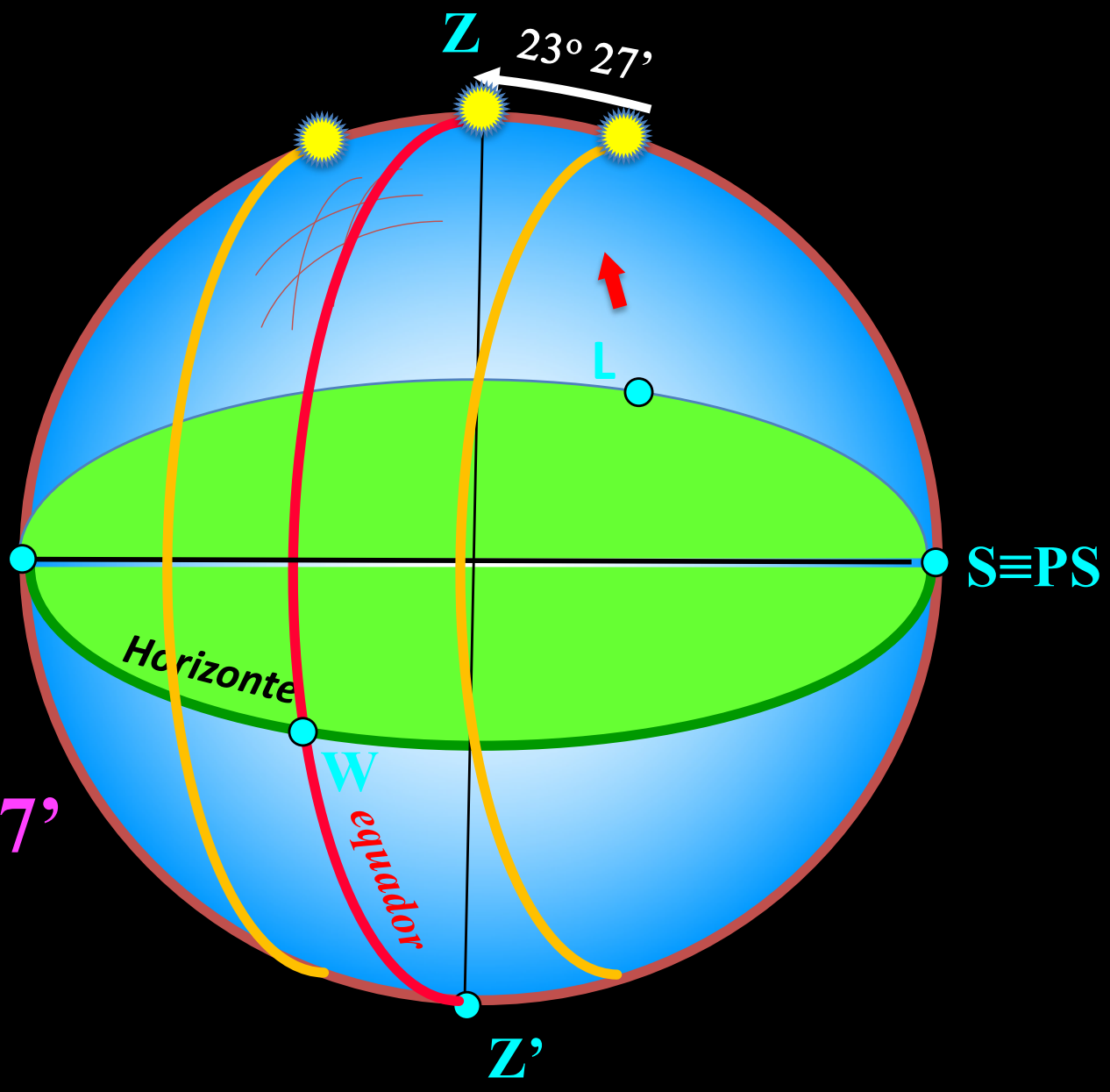
$\delta_{eq} = 0^o$

$\delta_{sol} = \pm 23^o\ 27'$

$h_{eq} = 90^o$

$h_{sol} = 90o - 23^o\ 27'$

$h_{sol} = 66^o\ 33'$



Solução 06

$\phi = 0^o$

$\varepsilon = 23^o\ 27'$

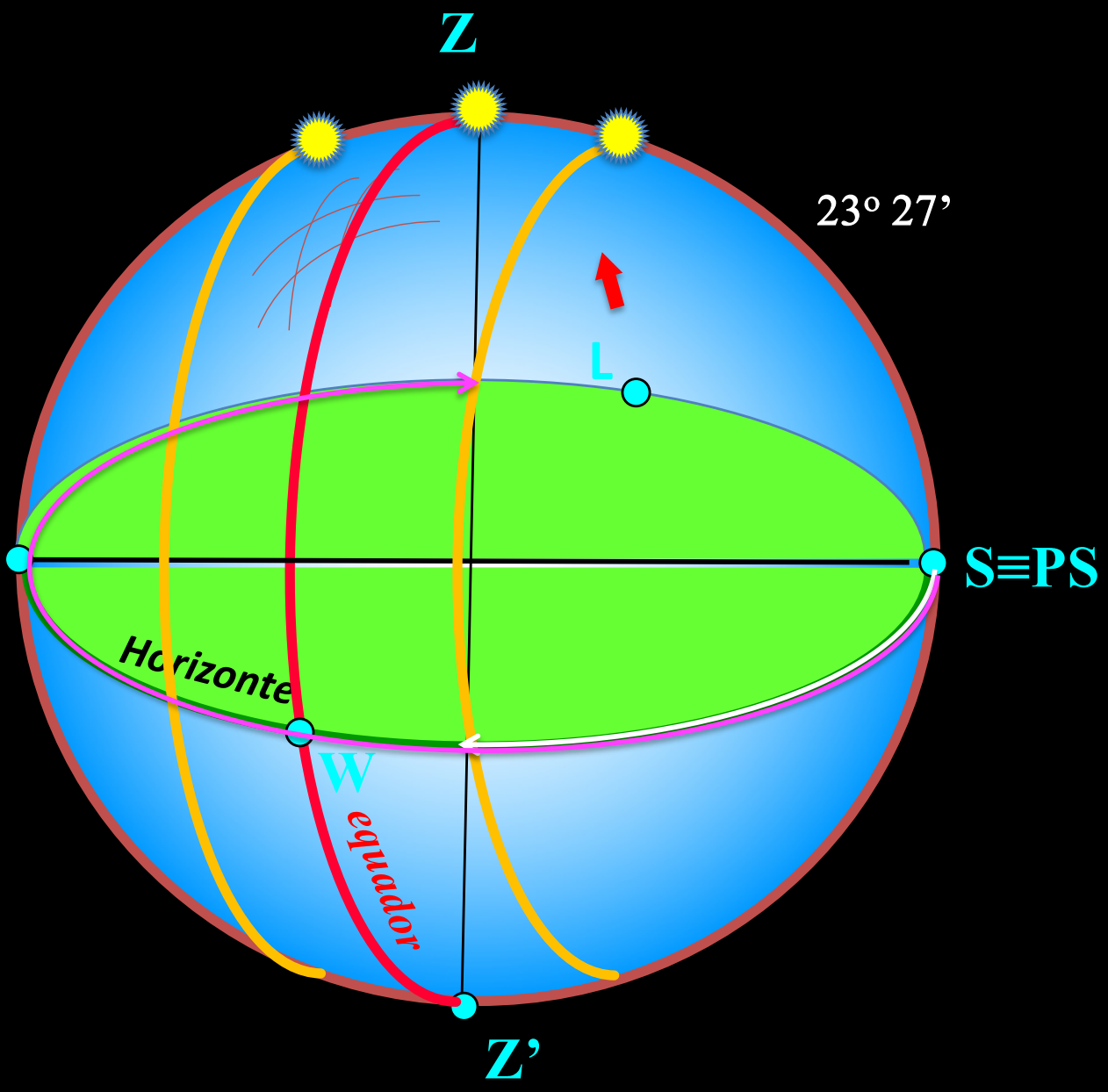
$\delta_{eq} = 0^o$

$\delta_{sol} = \pm 23^o\ 27'$

$A_{eq} = 90^o$ e 270^o

$A_{sol} = 66^o\ 33'$

$A_{sol} = 246^o\ 33'$



F I M