



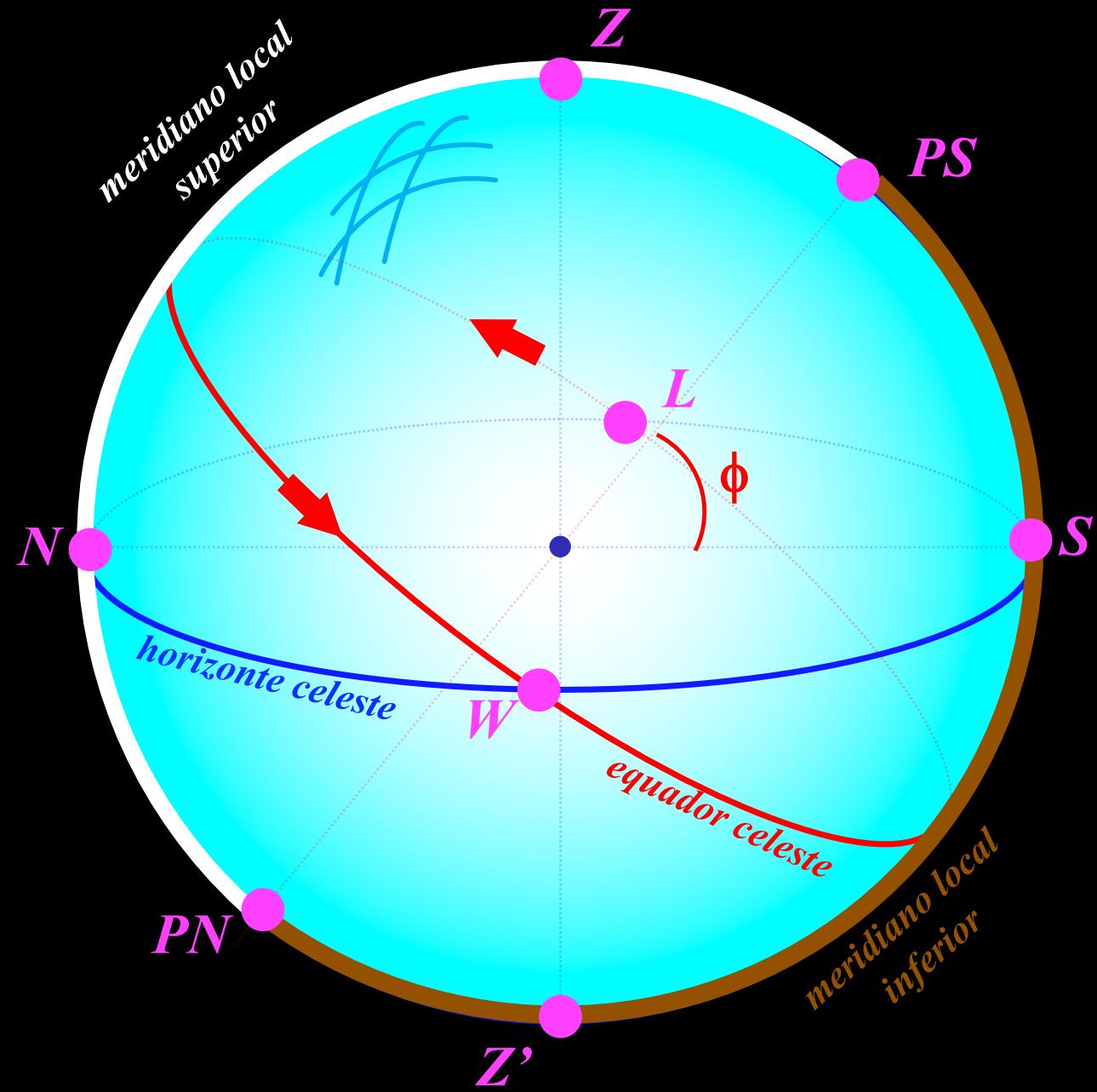
*Astronomia de Posição*  
*2º semestre - 2022*

*Aula\_5 – 24/08/2022*

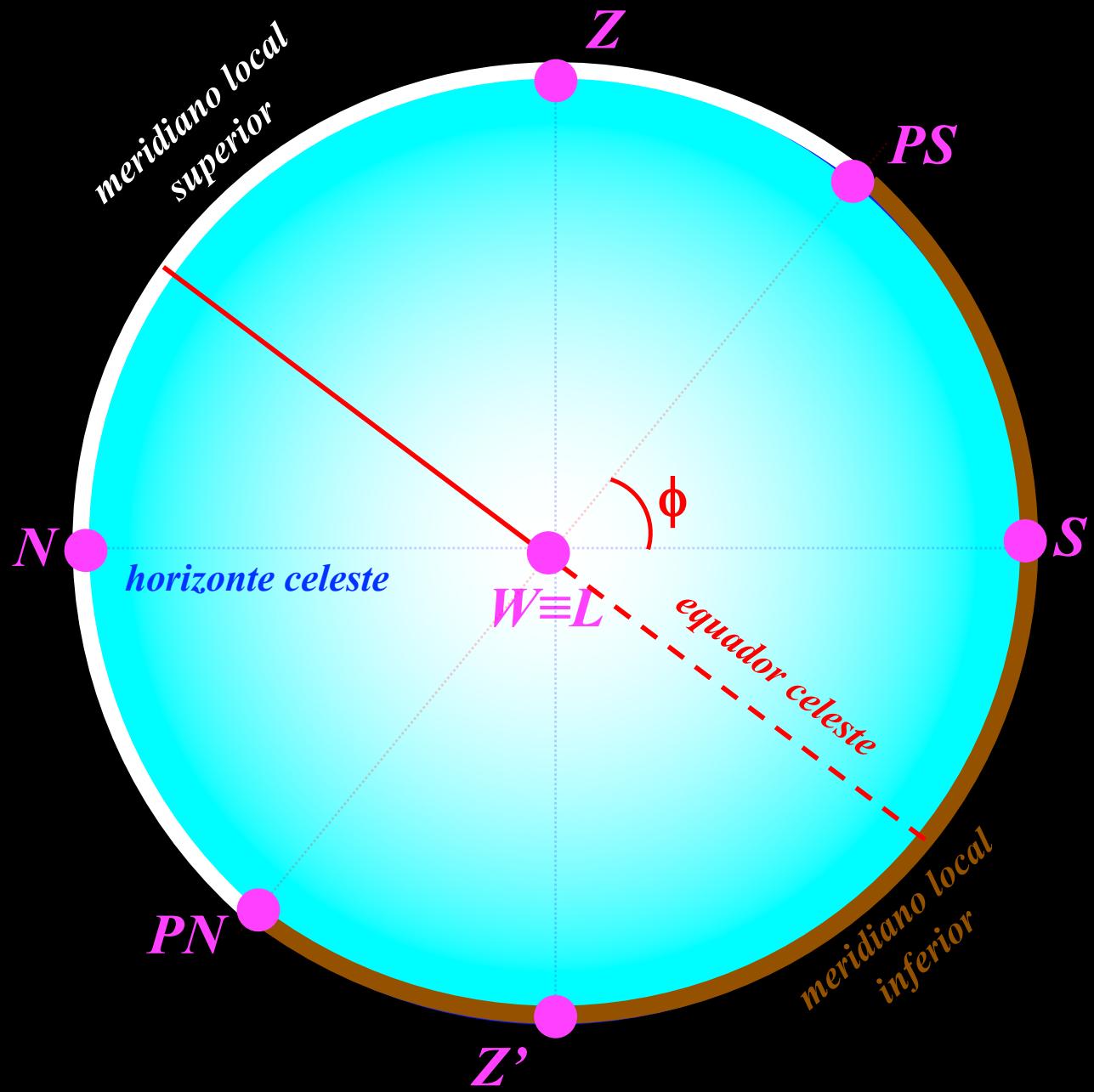
# *Movimentos aparentes dos astros*

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*rama.teixeira@iag.usp.br*

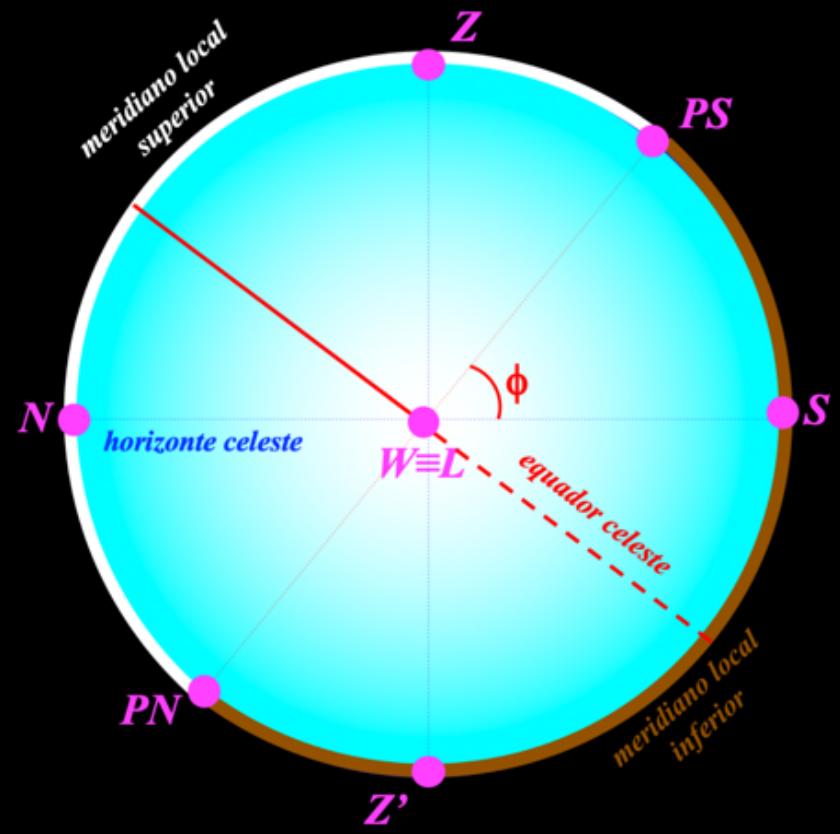
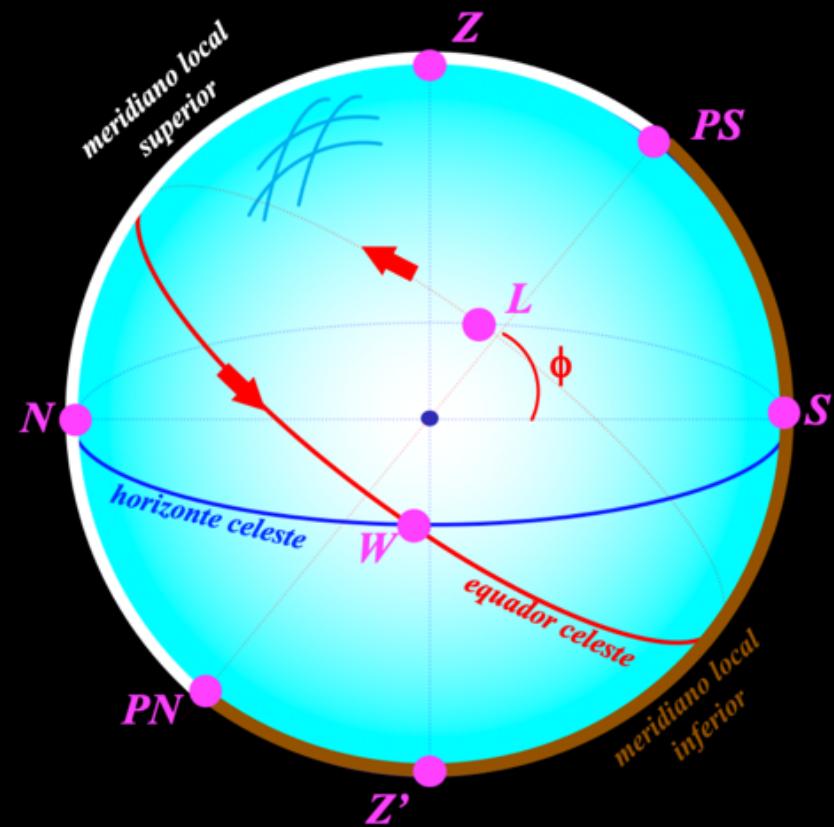
# *esfera celeste*



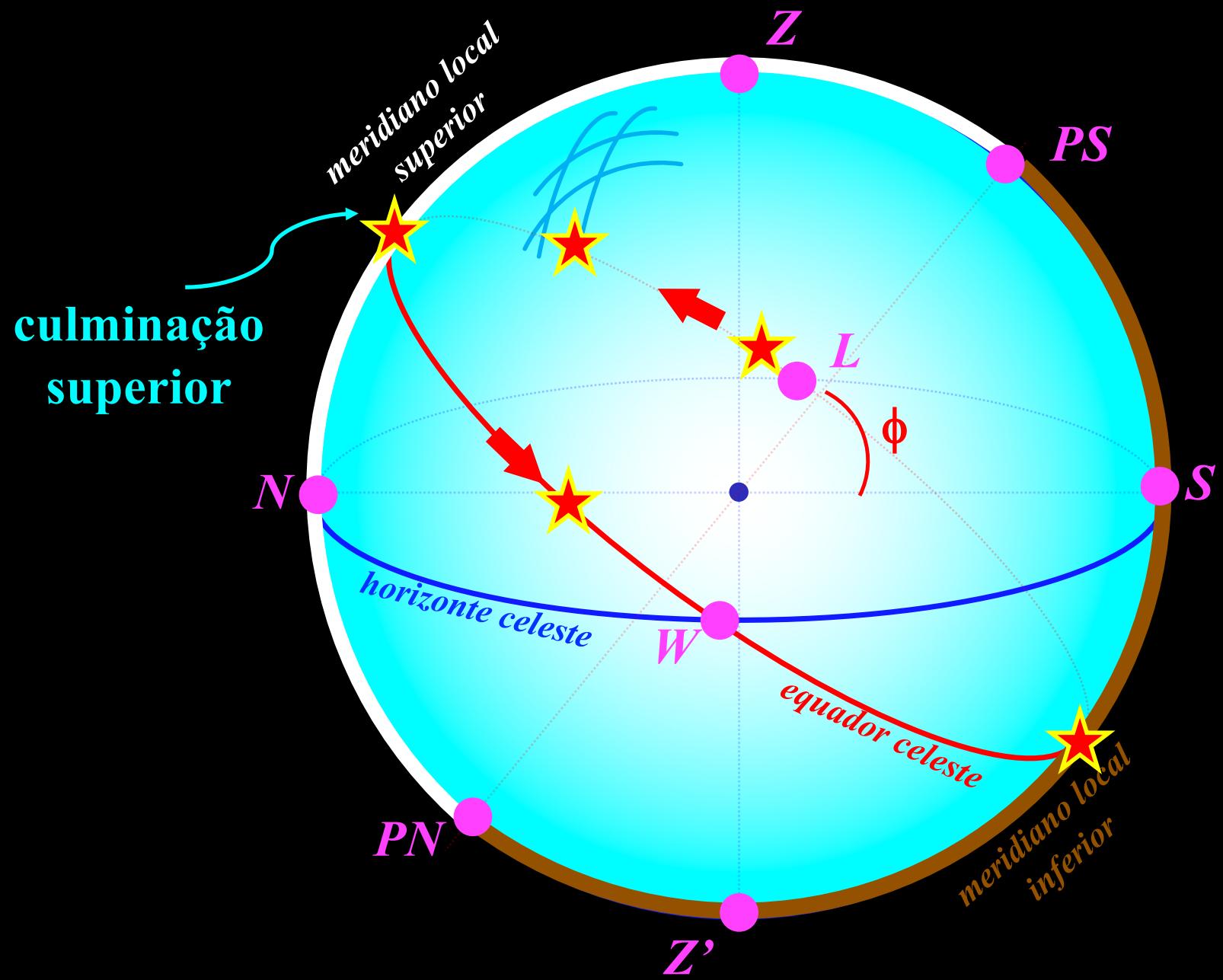
# *esfera celeste projetada*



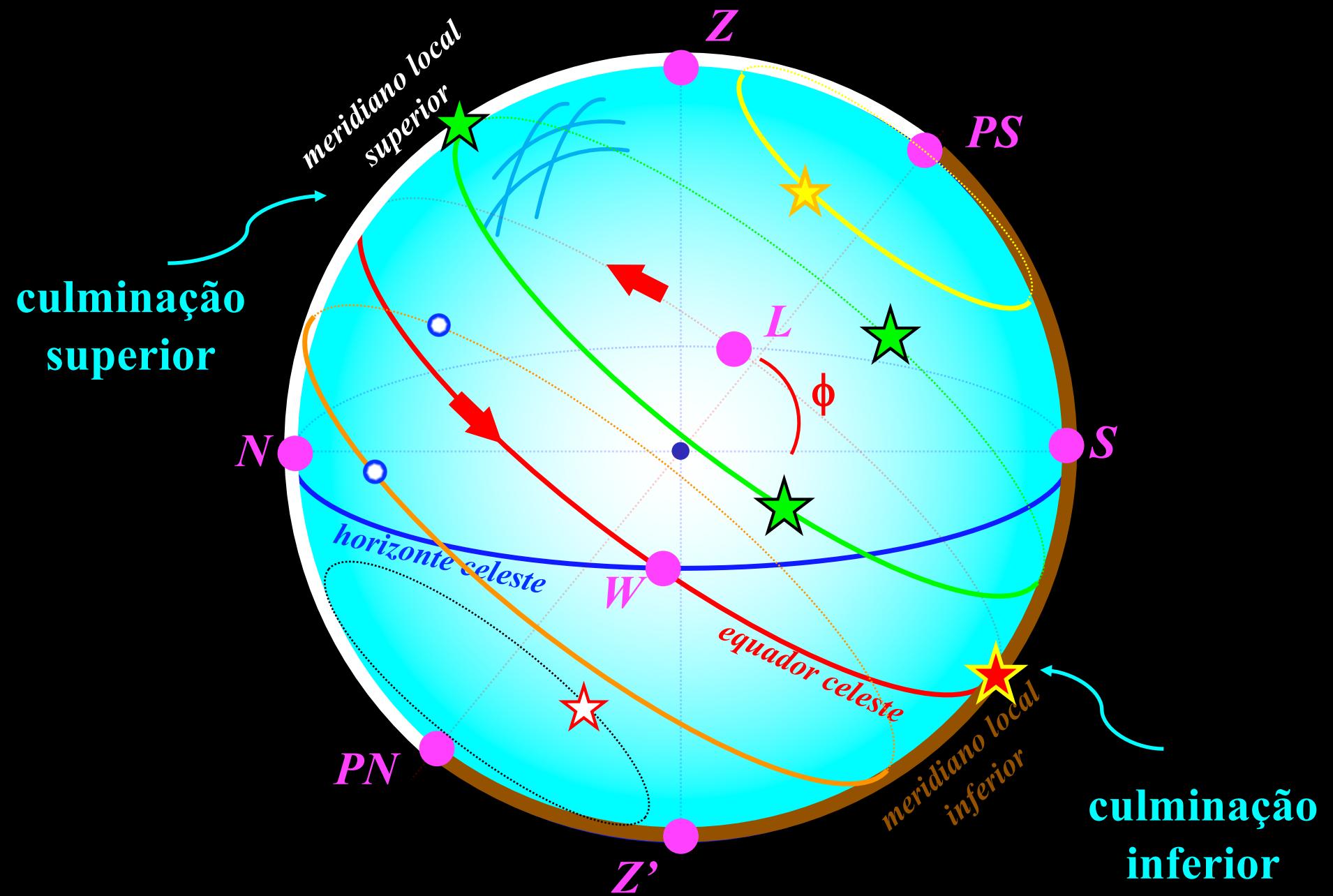
# *esfera celeste*



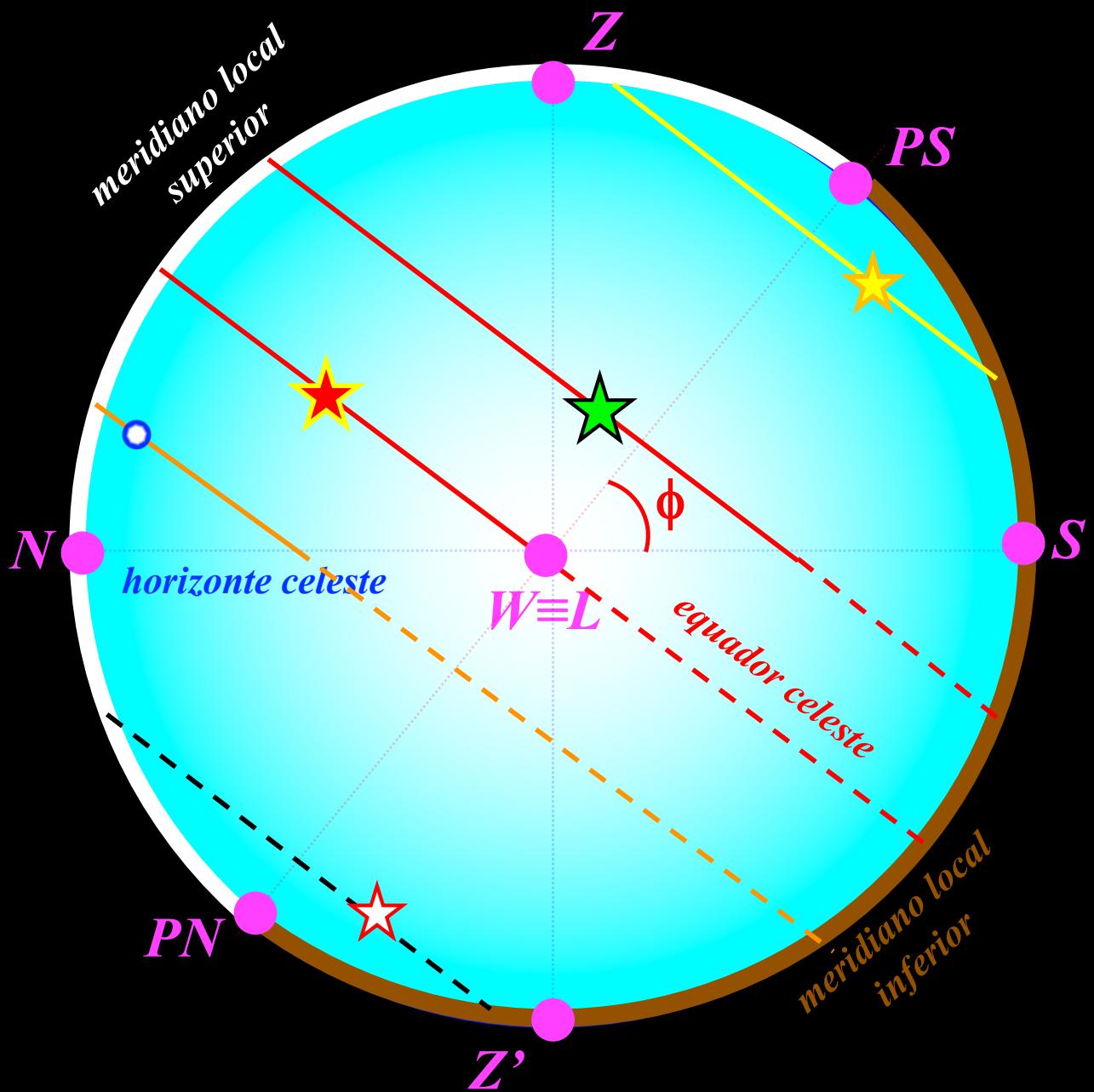
# *movimento diurno (diário) HS*



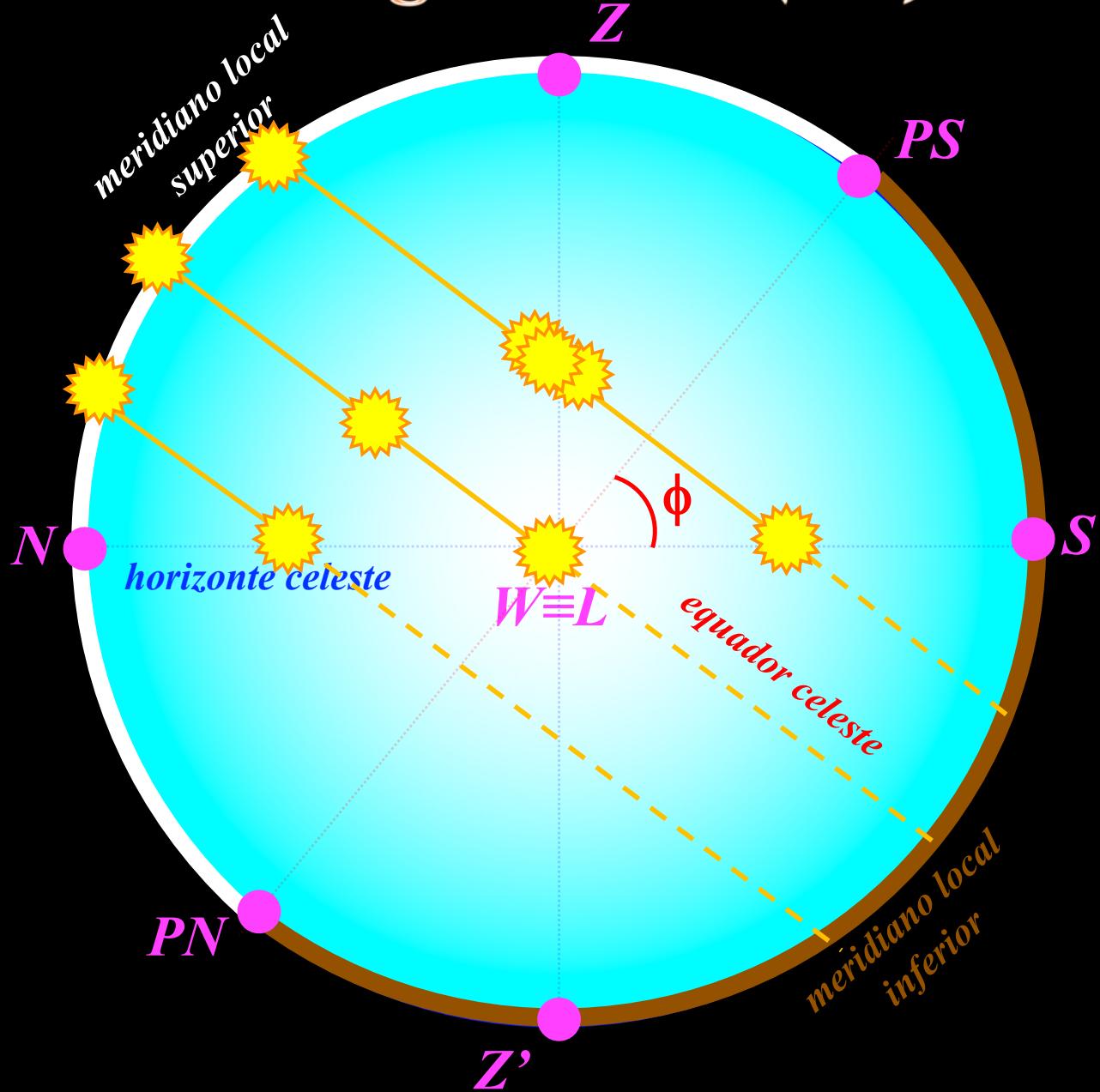
# *movimento diurno (diário) HS*



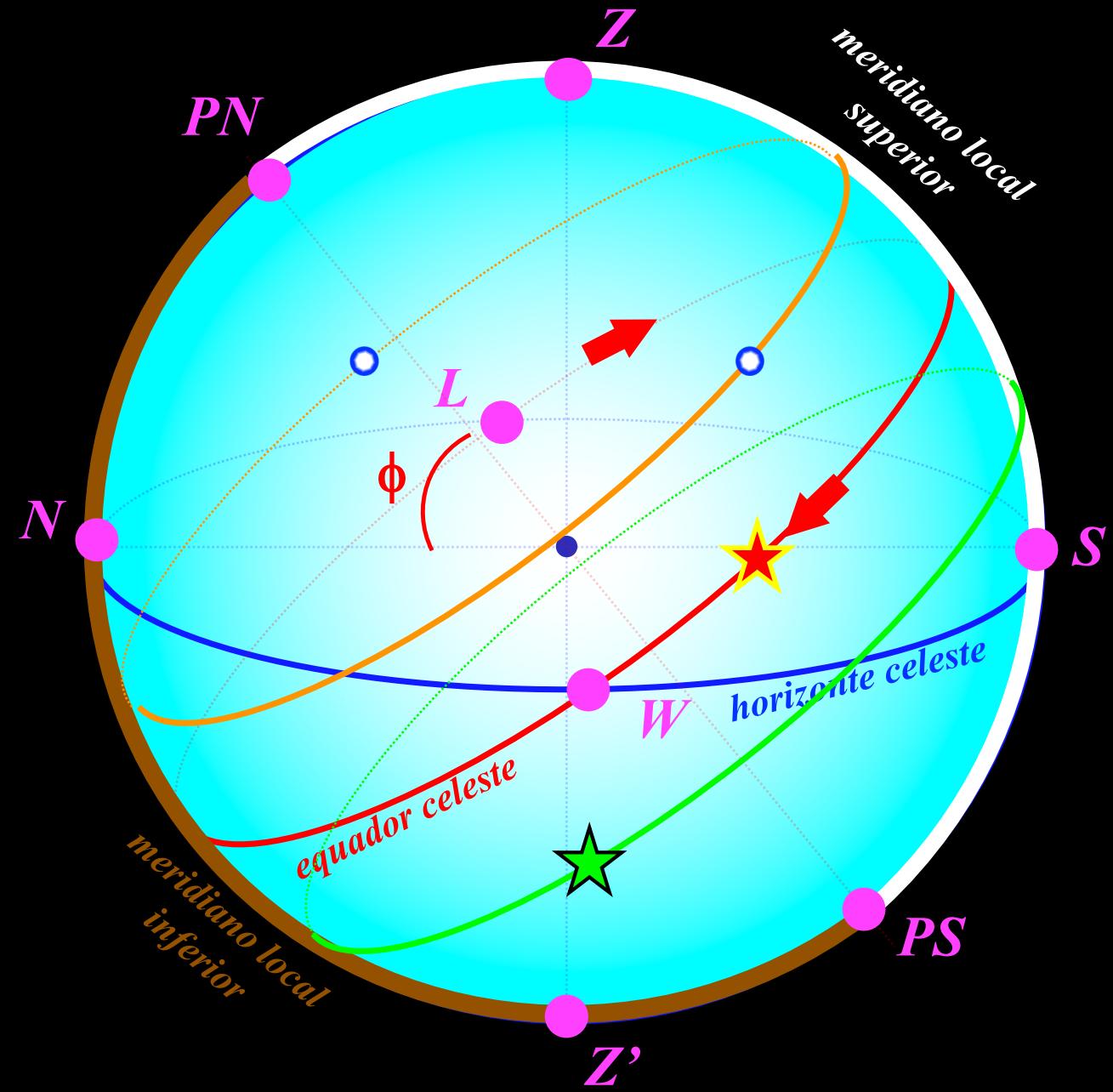
# *movimento diurno (diário) HS*



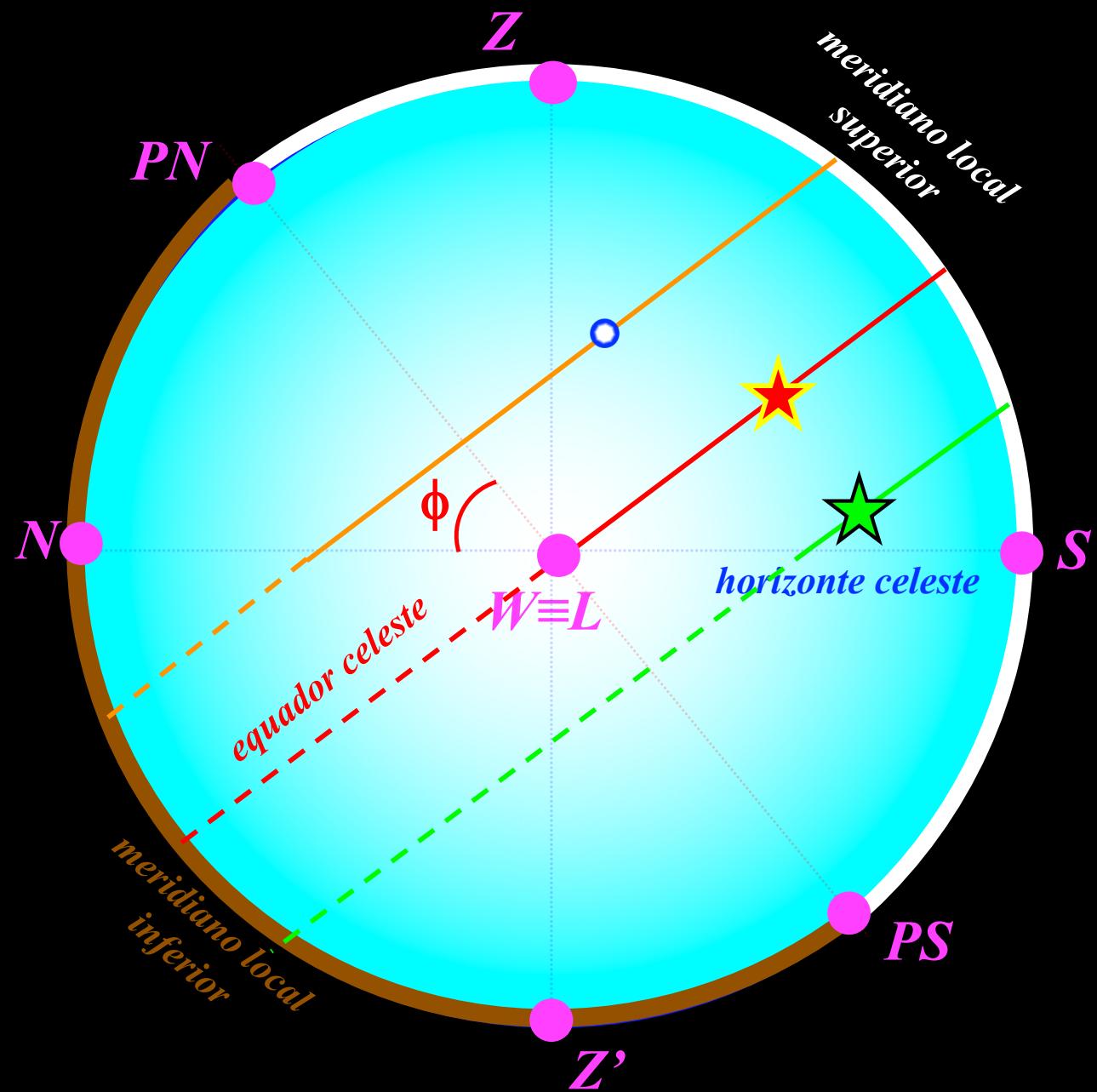
# *movimento diuron (diário) do Sol ao longo do ano (HS)*



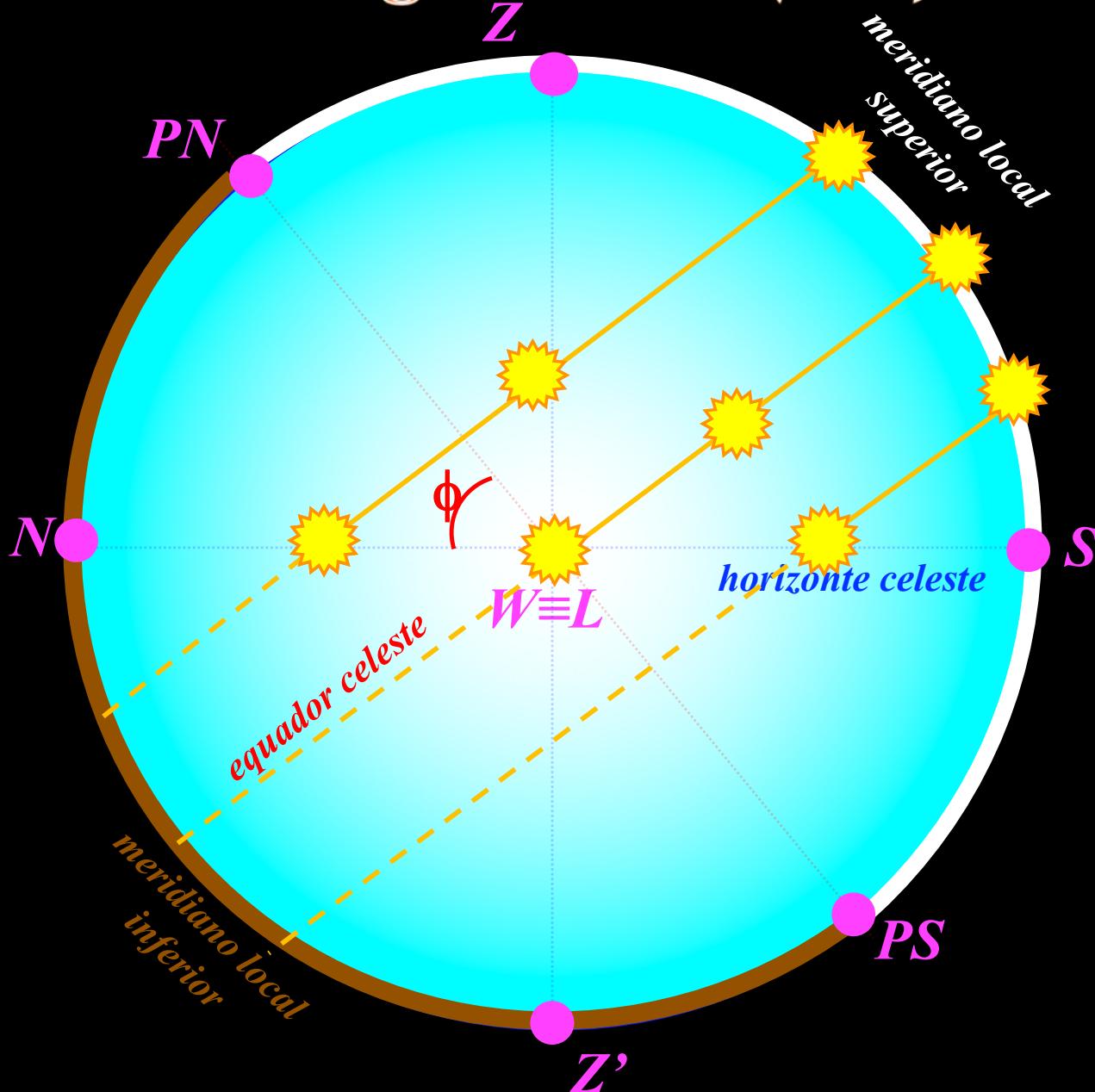
# *movimento diurno (diário) HN*



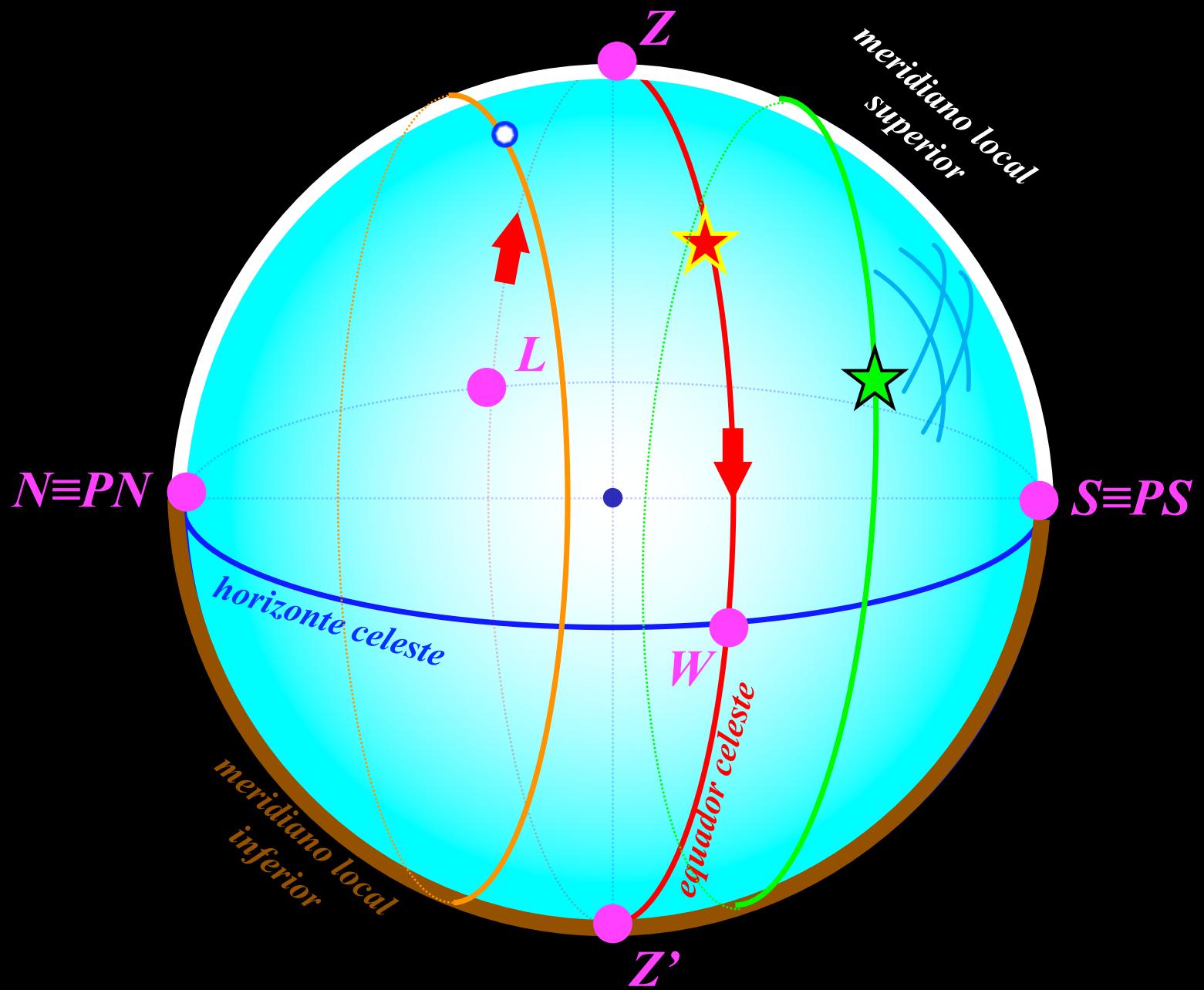
# *movimento diurno (diário) HN*



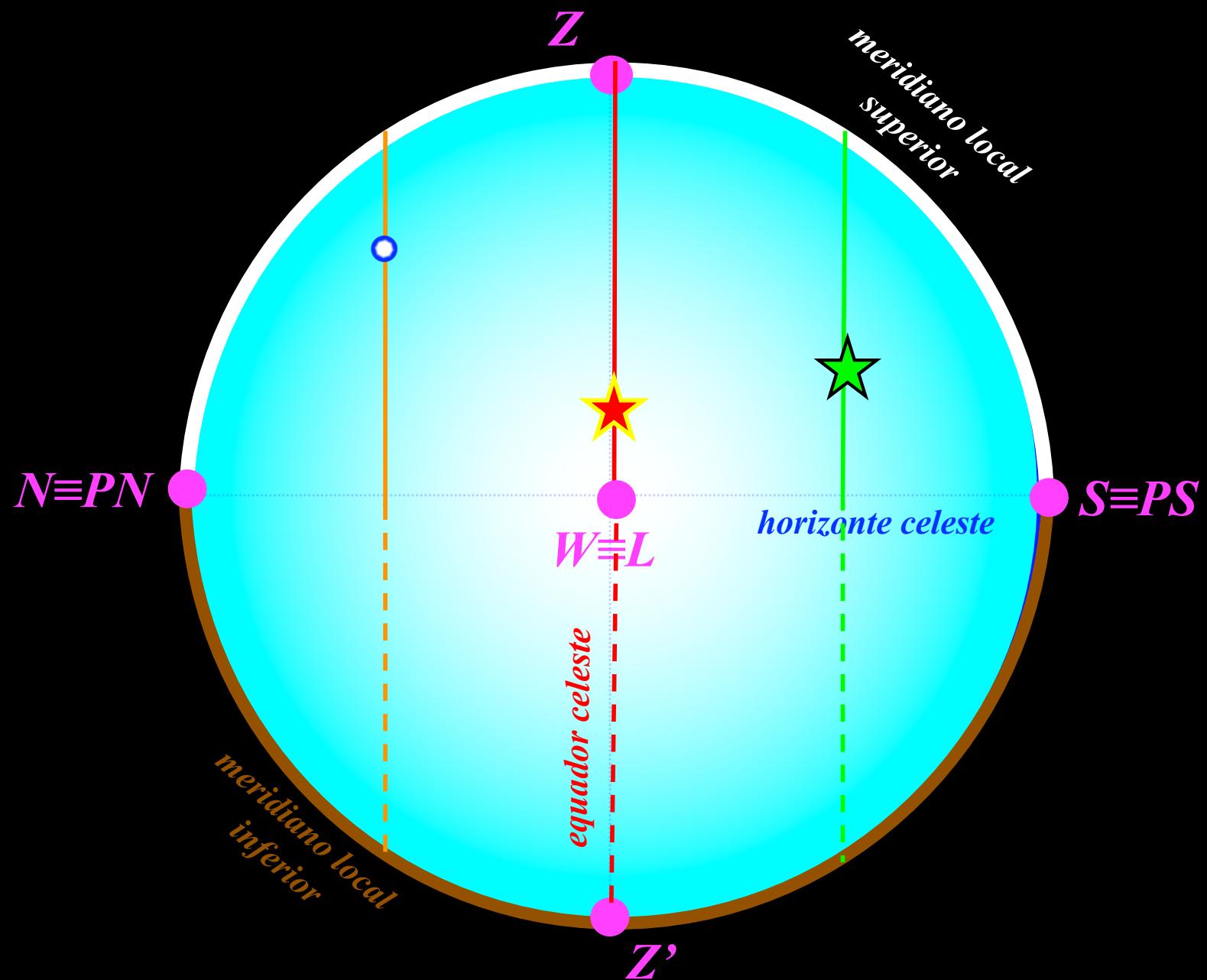
# *movimento diurno do Sol ao longo do ano (HN)*



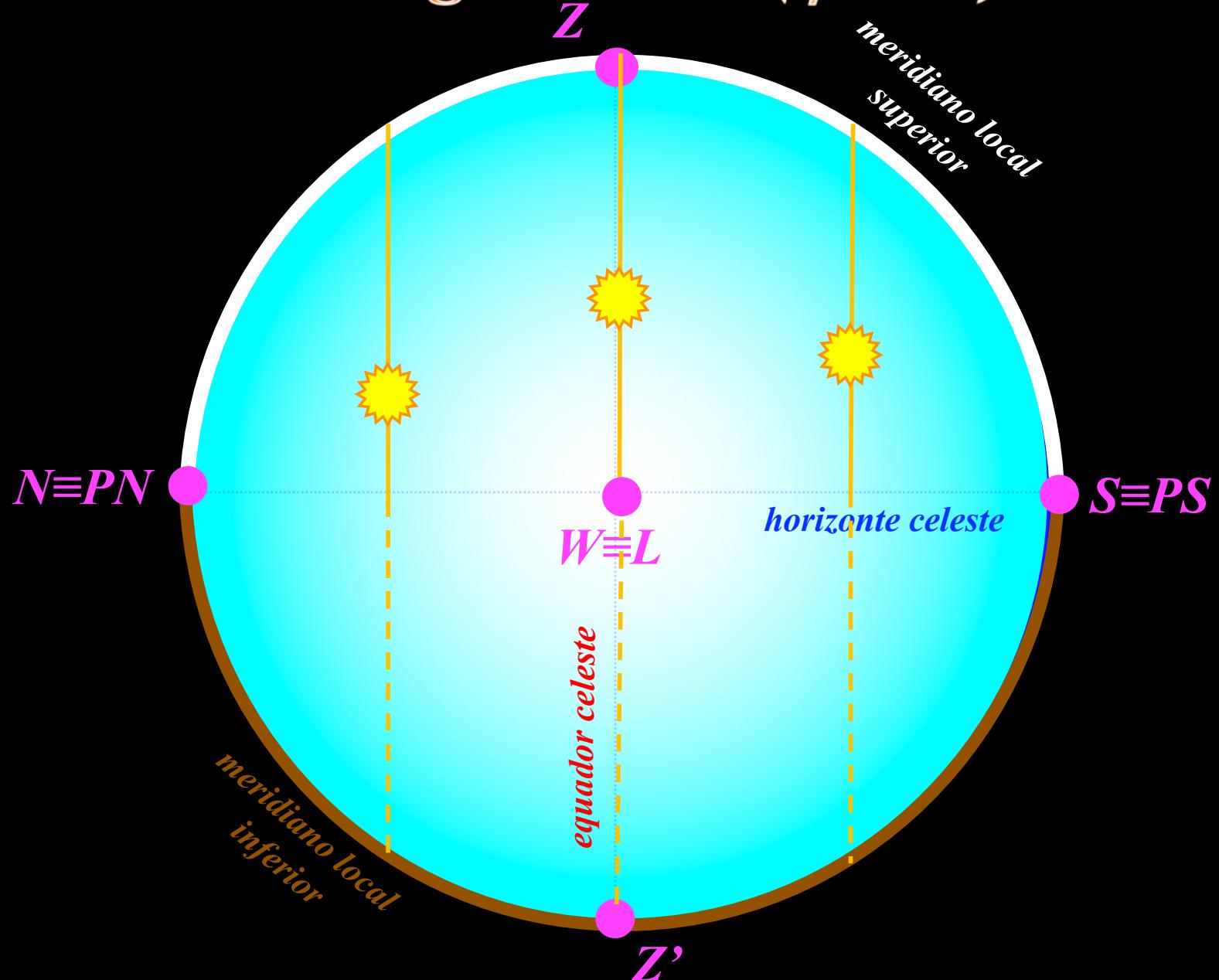
# *movimento diurno (diário) ( $\phi = 0^\circ$ )*



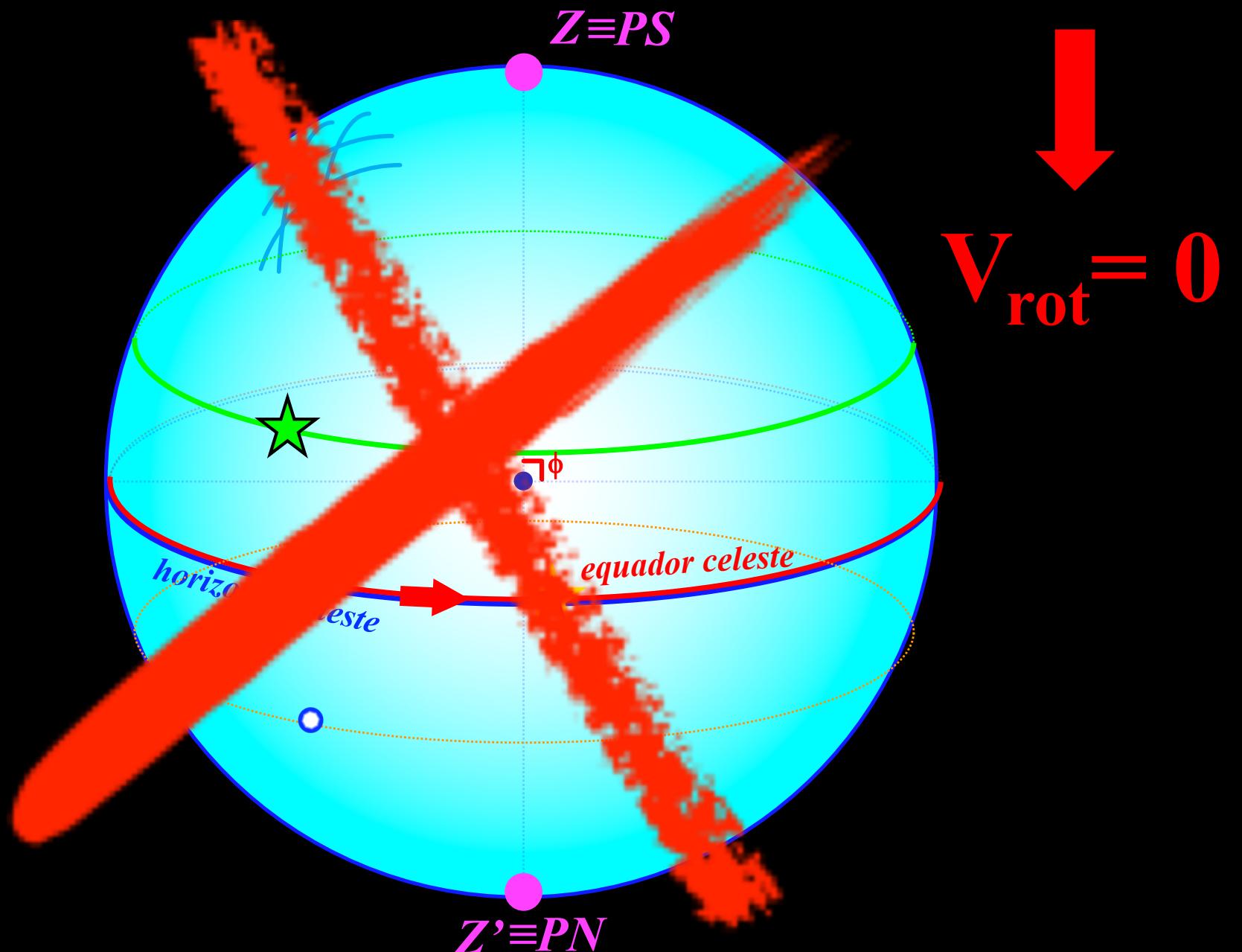
# *movimento diurno (diário) ( $\phi = 0^\circ$ )*



# *movimento diurno do Sol ao longo do ano ( $\phi = 0^\circ$ )*

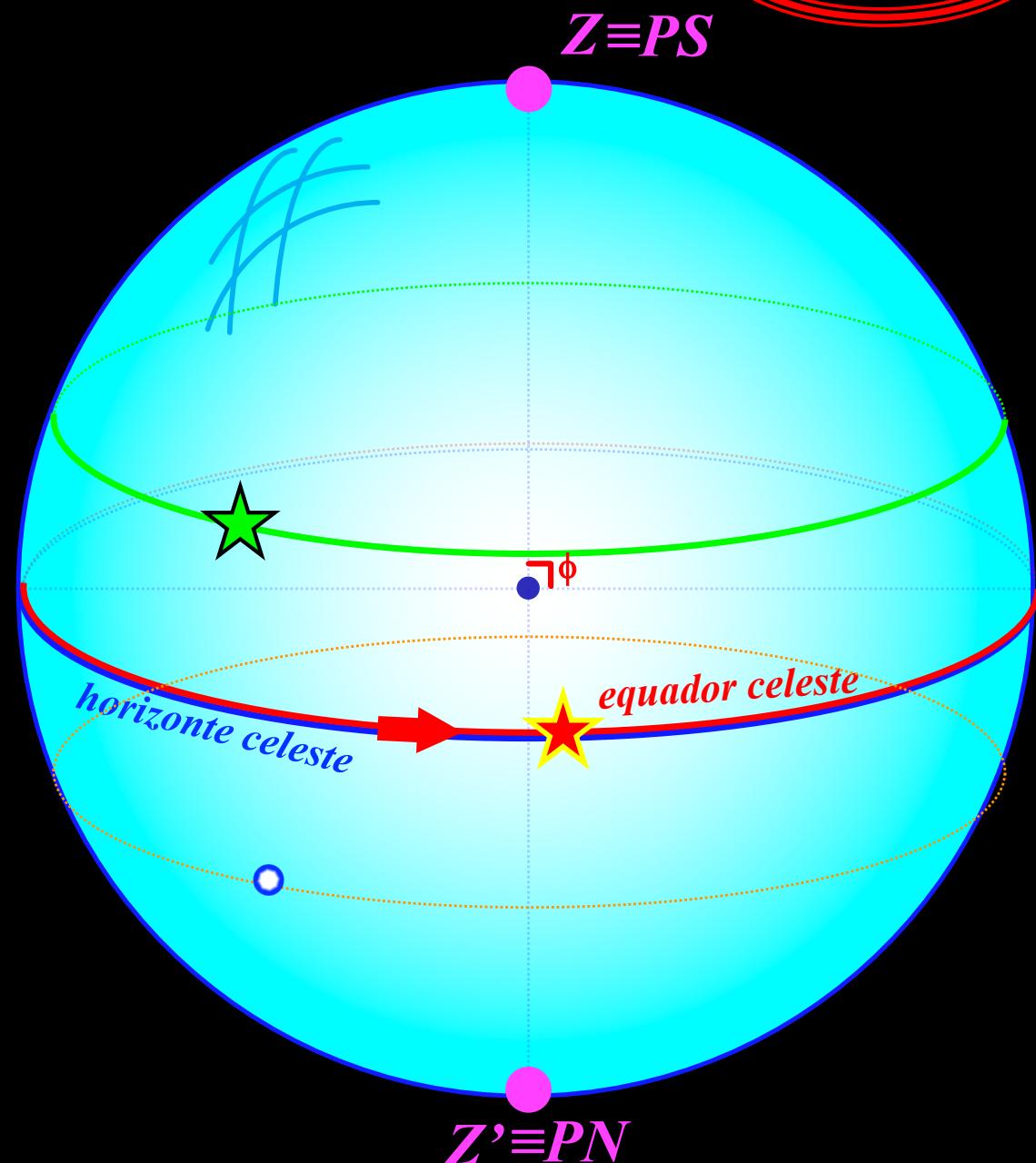


# *movimento diurno (diário) ( $\phi = -90^\circ$ )*

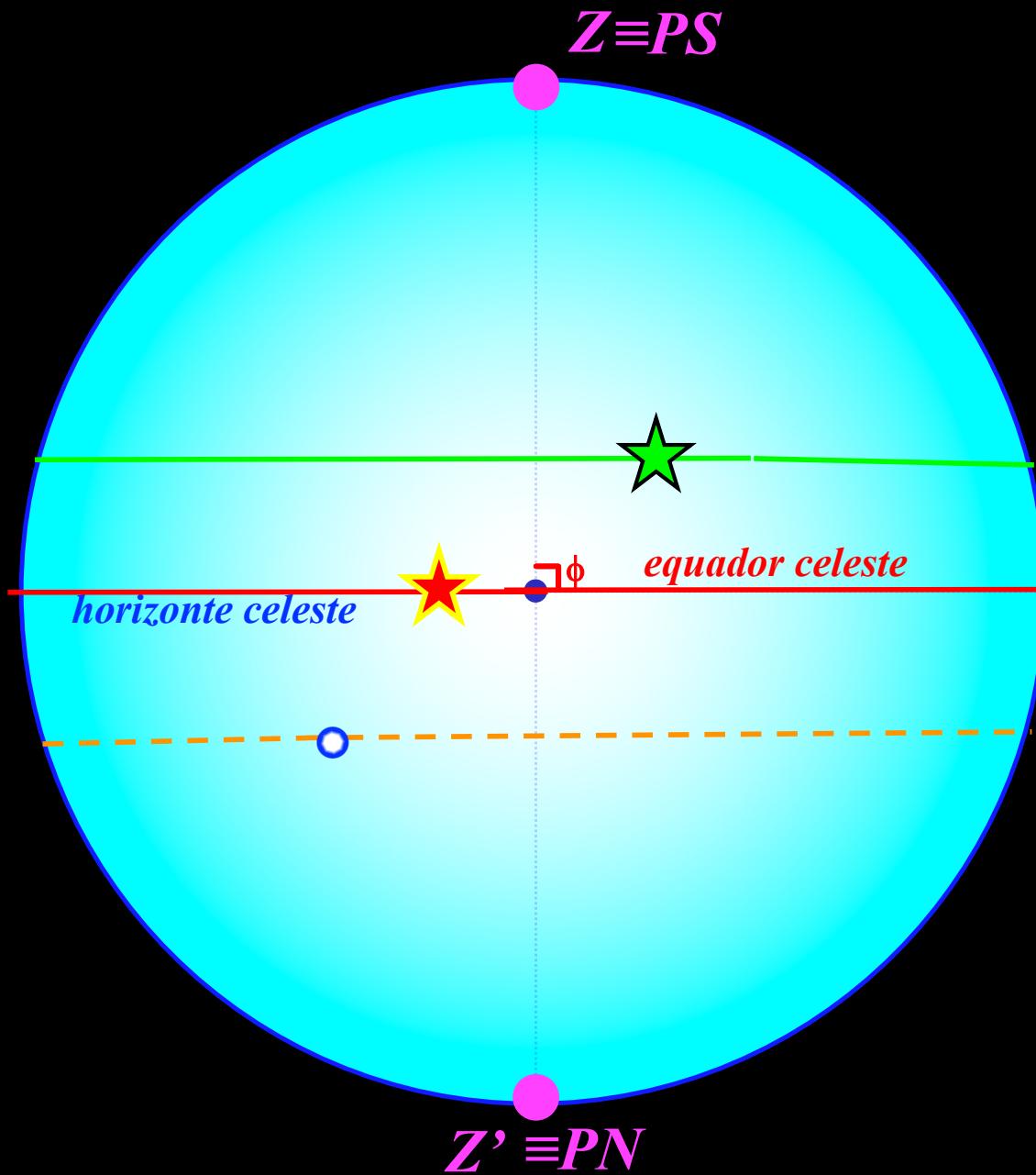




# *movimento diurno ( $\pm$ polo sul)*

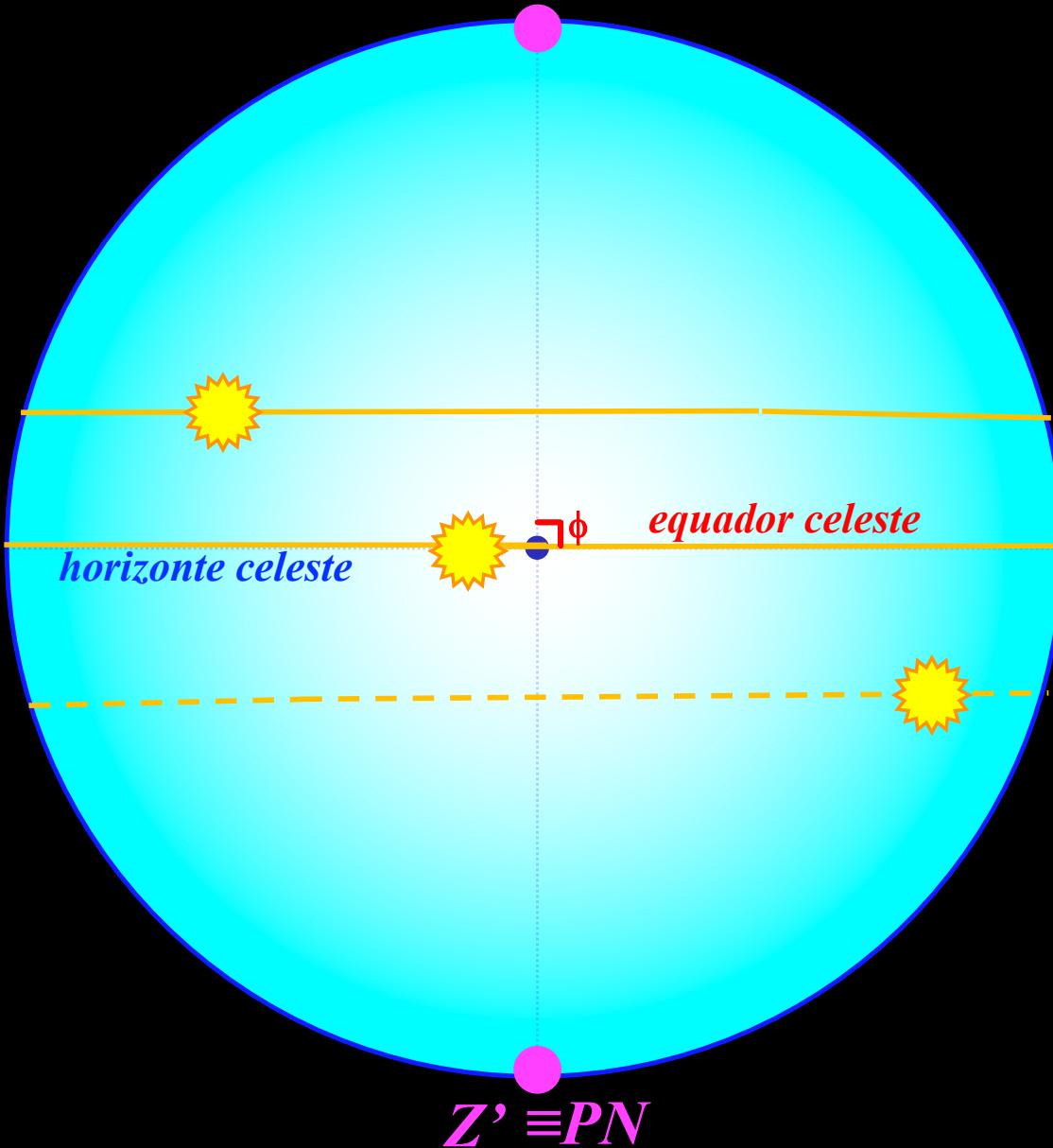


# *movimento diurno ( $\pm$ polo sul)*



*movimento diurno do Sol ( $\pm$ polo sul)  
ano longo do ano*

$Z \equiv PS$



# *elementos da esfera celeste*

## *movimento anual aparente do Sol*

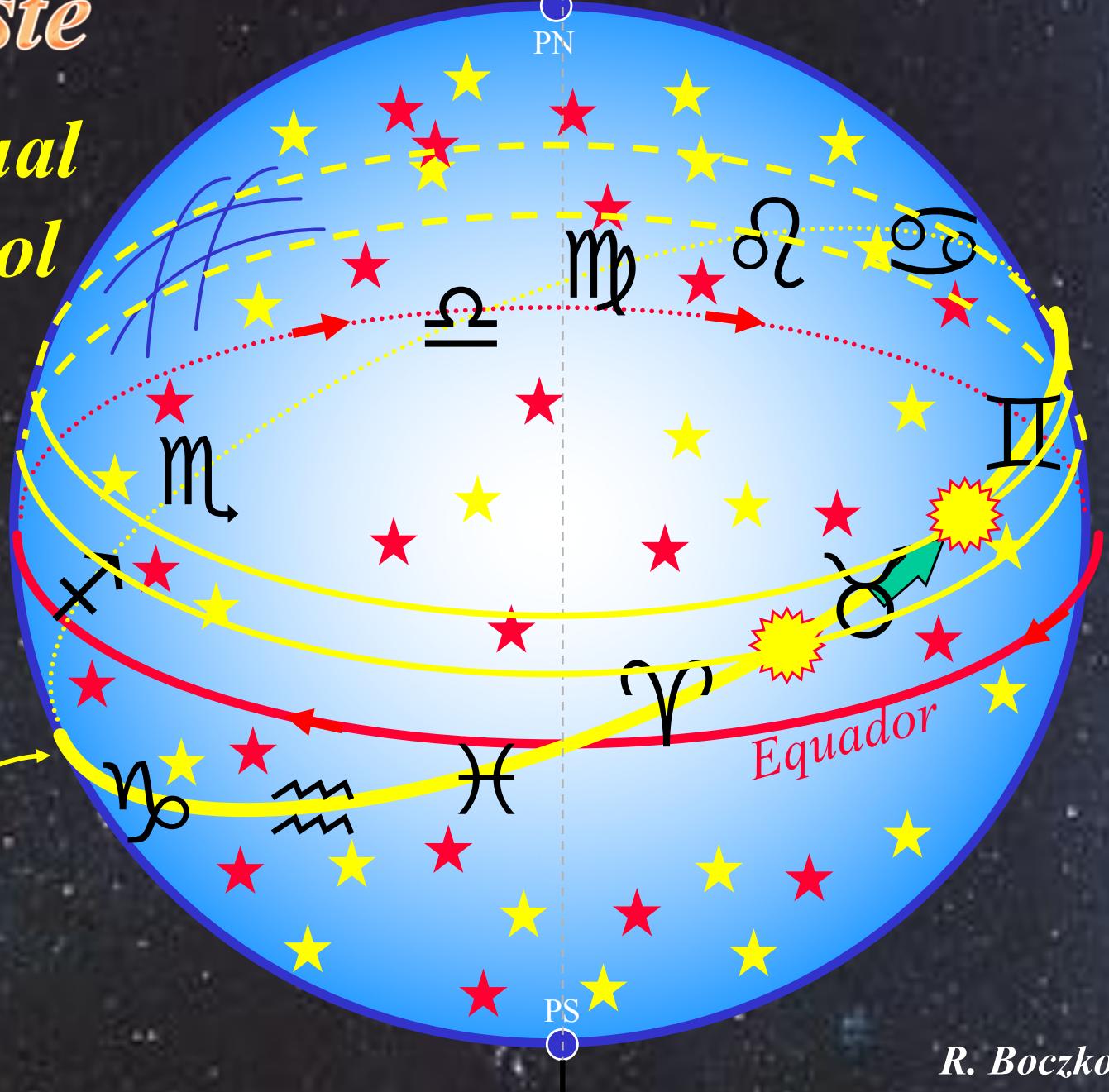
*eclíptica*

*Eixo de  
rotação*

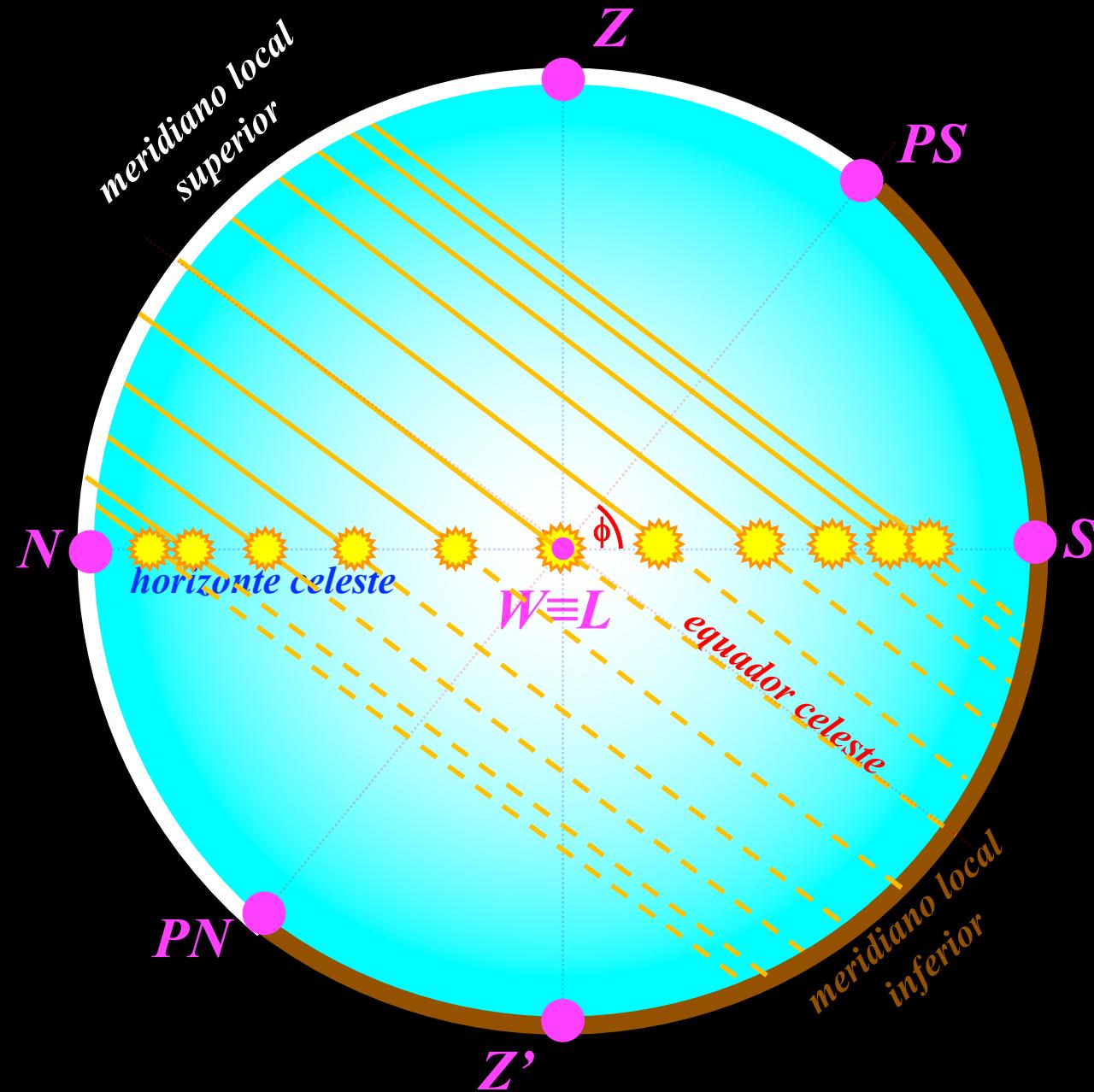
PN

PS

*Equador*

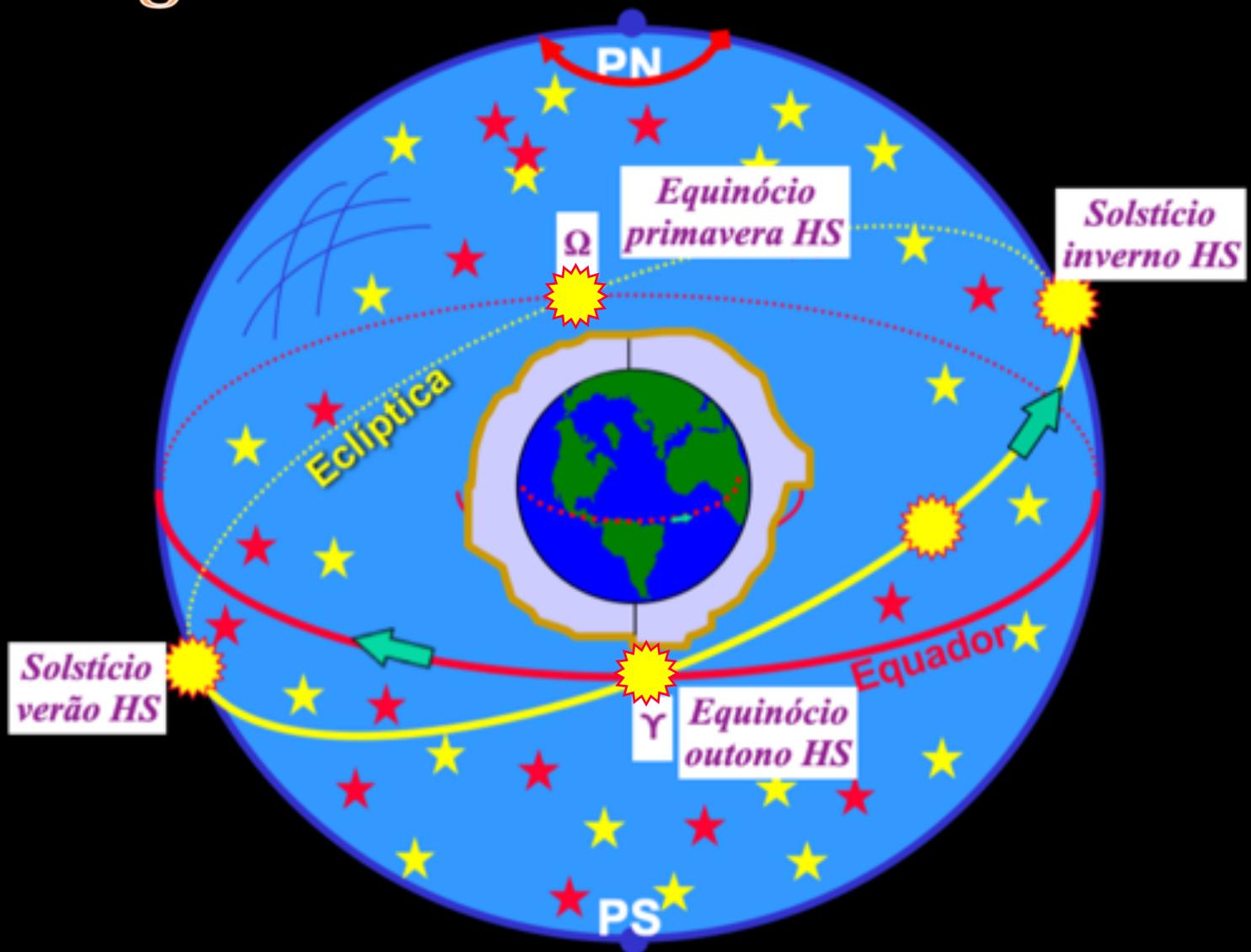


# *movimento diurno e annual aparentes do Sol para HS*

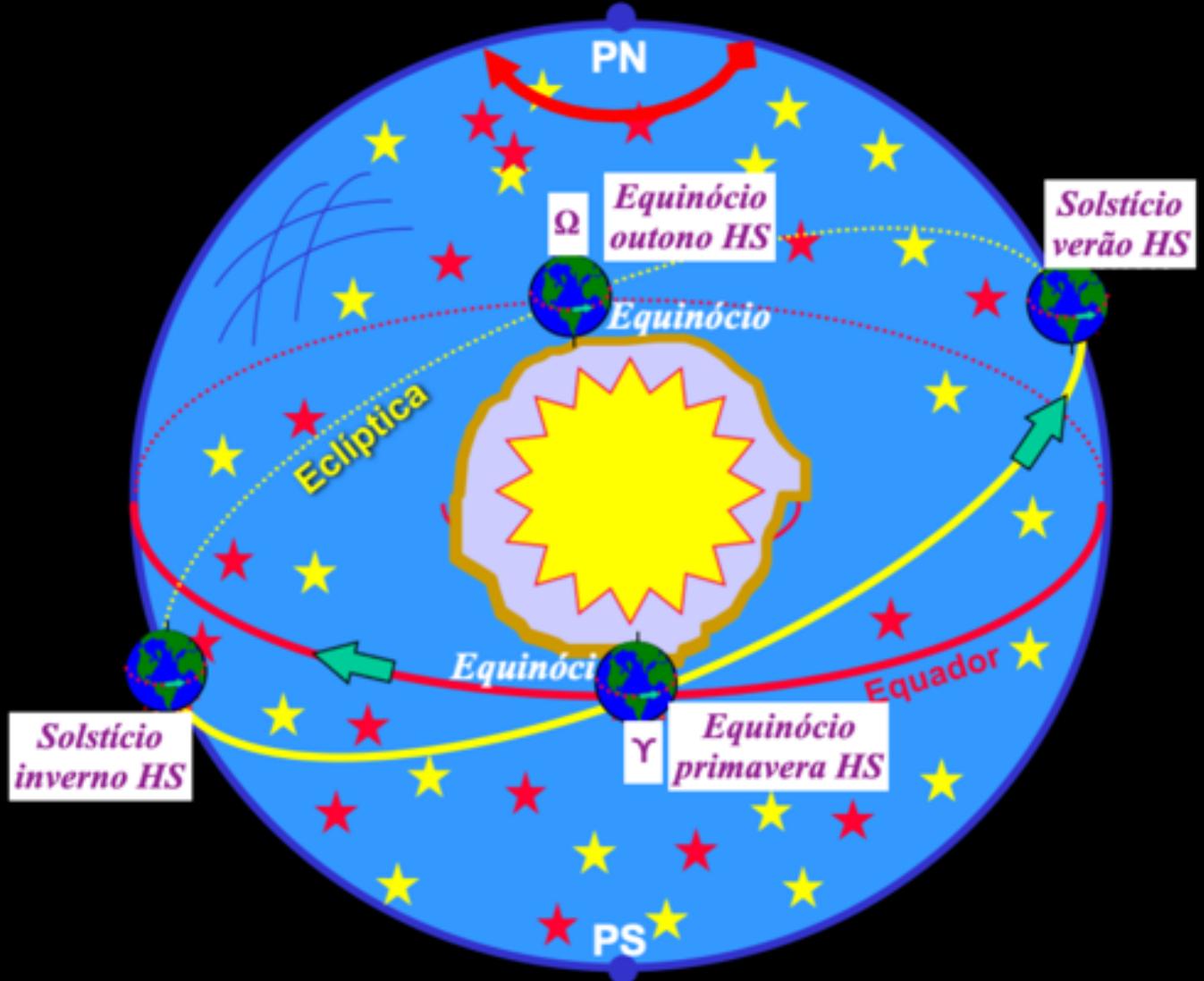


# *estações do ano*

## *ponto de vista geocêntrico*



# *estações do ano ponto de vista heliocêntrico*



**FIM**