

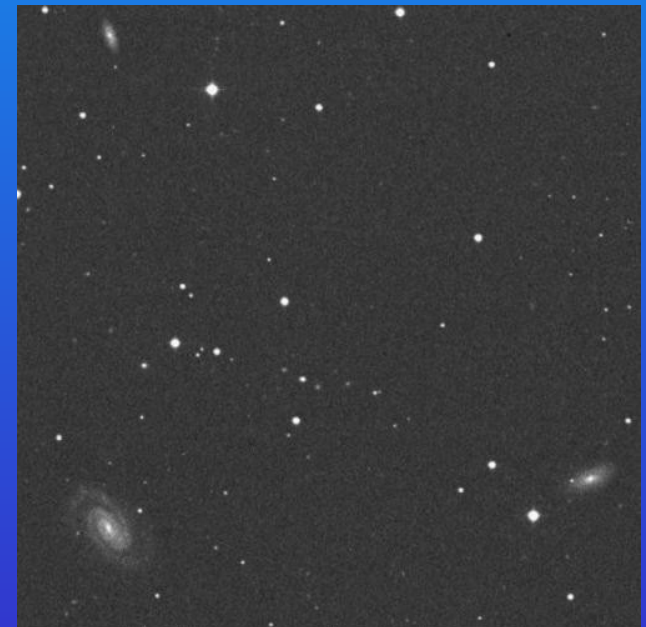
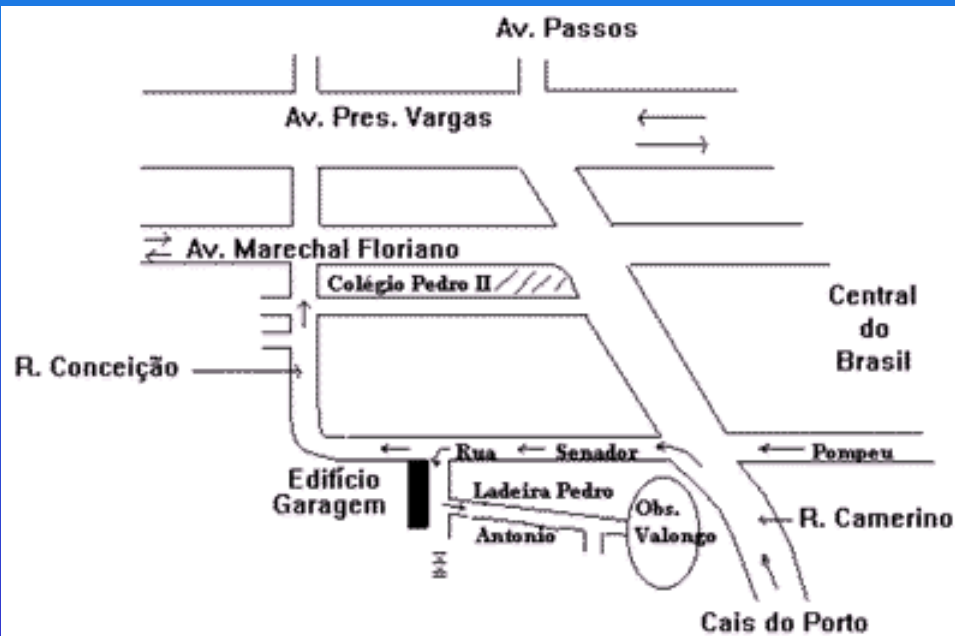
Astronomia Fundamental e Astrometria

M. Assafin

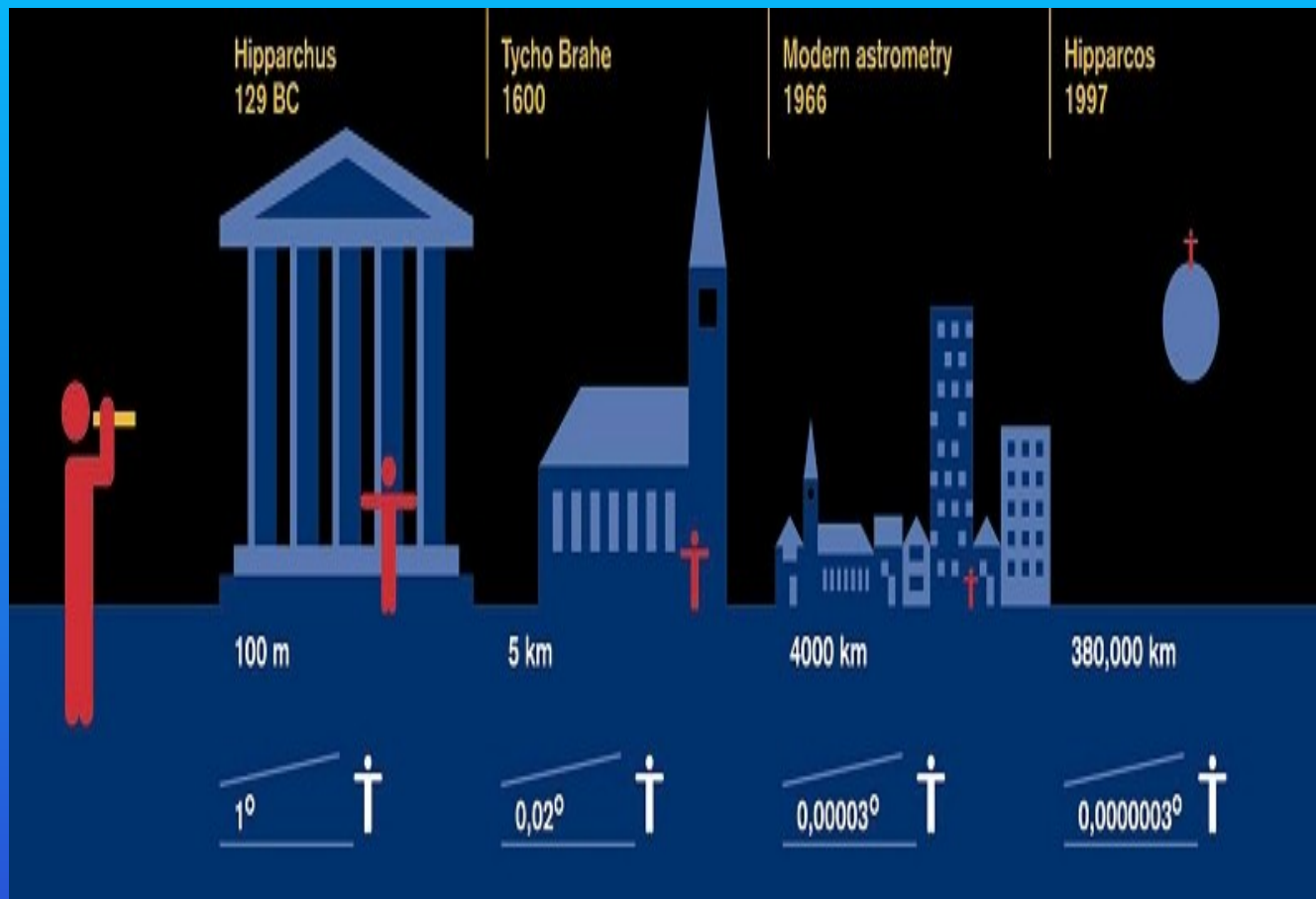
Observatório do Valongo -
UFRJ

Departamento de Astronomia

Mapeando o Universo

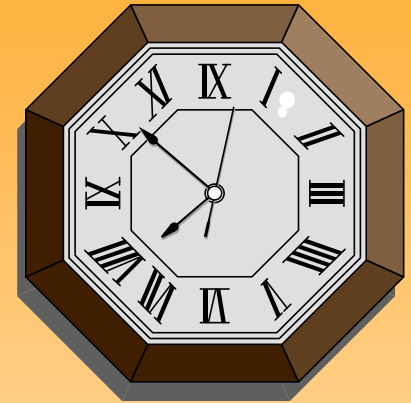
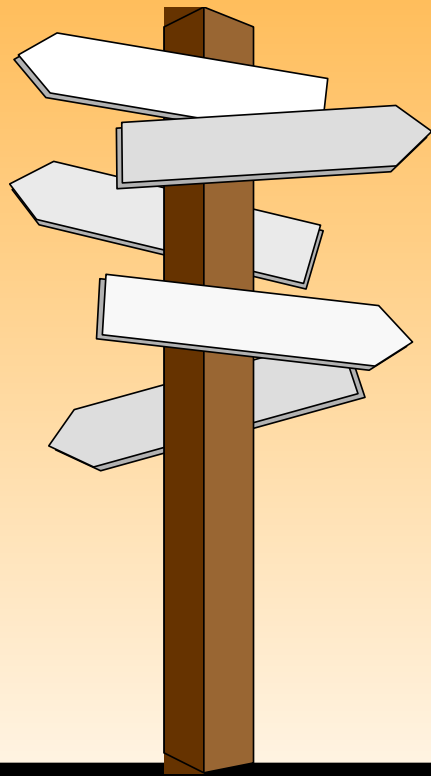


Posições de Objetos Celestes



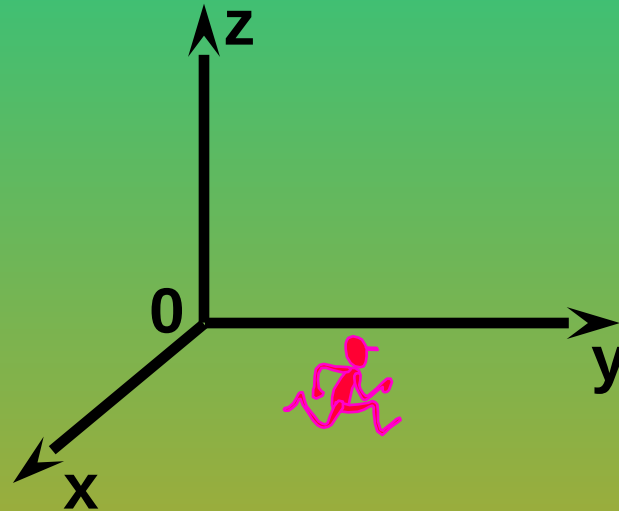
Dada em catálogos astrométricos

Objetivos de um Sistema de Referência

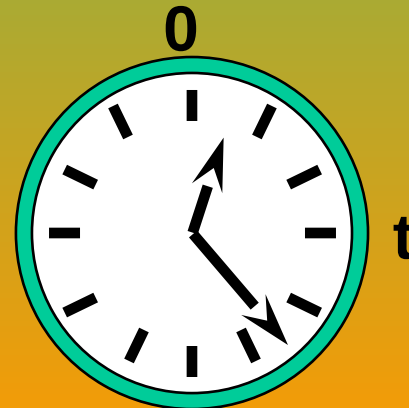


Sistemas de Referência

Espaciais



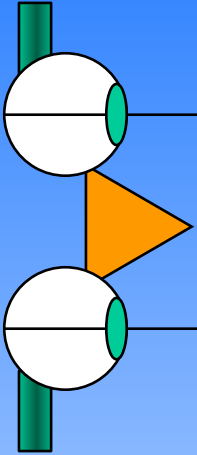
Temporais



Abóbada celeste

Acomodação visual

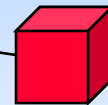
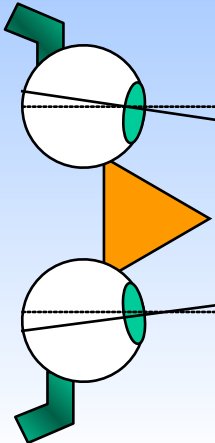
**Músculo
descontraído**



**Objeto
muito
distante**



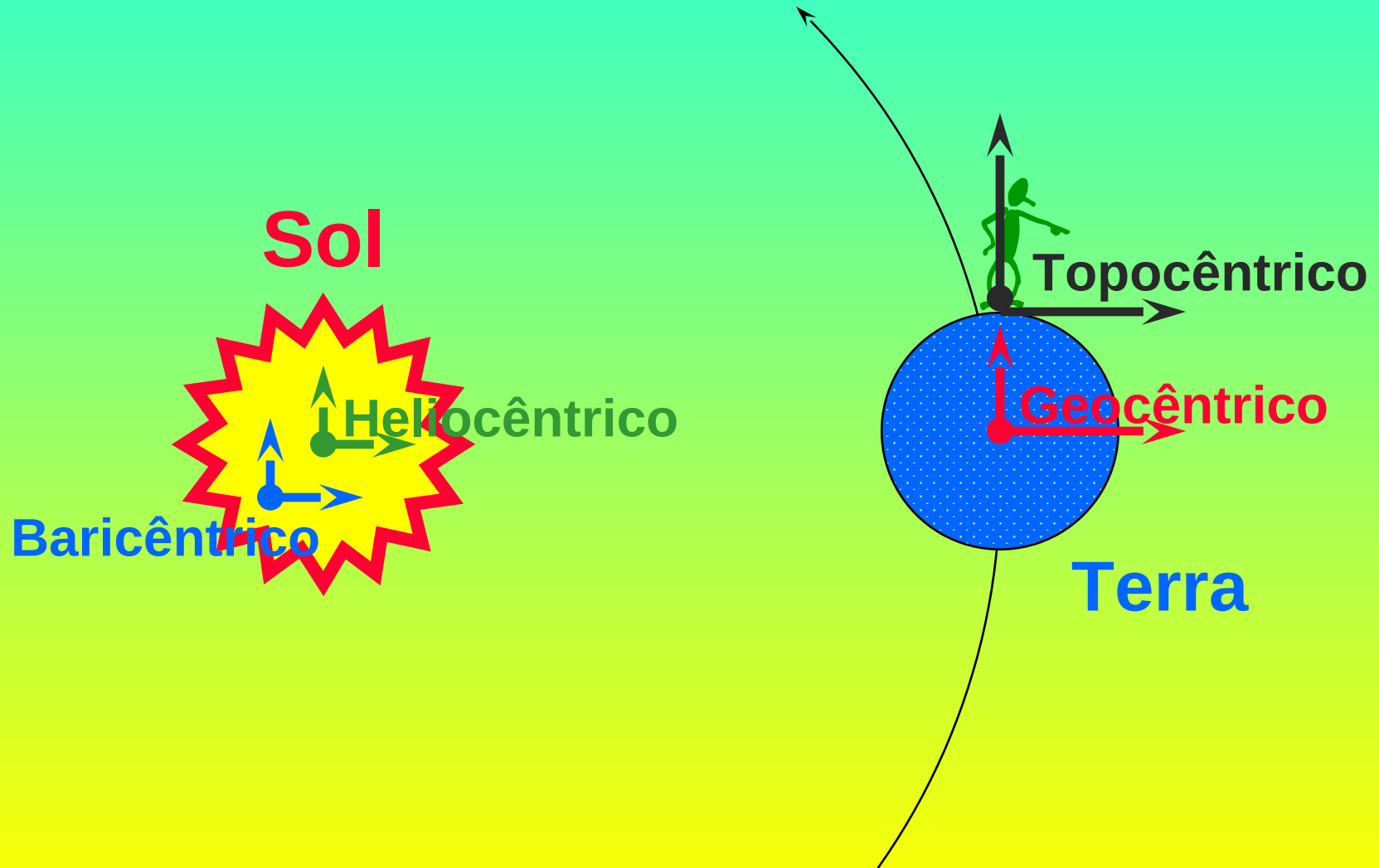
**Músculo
contraído**



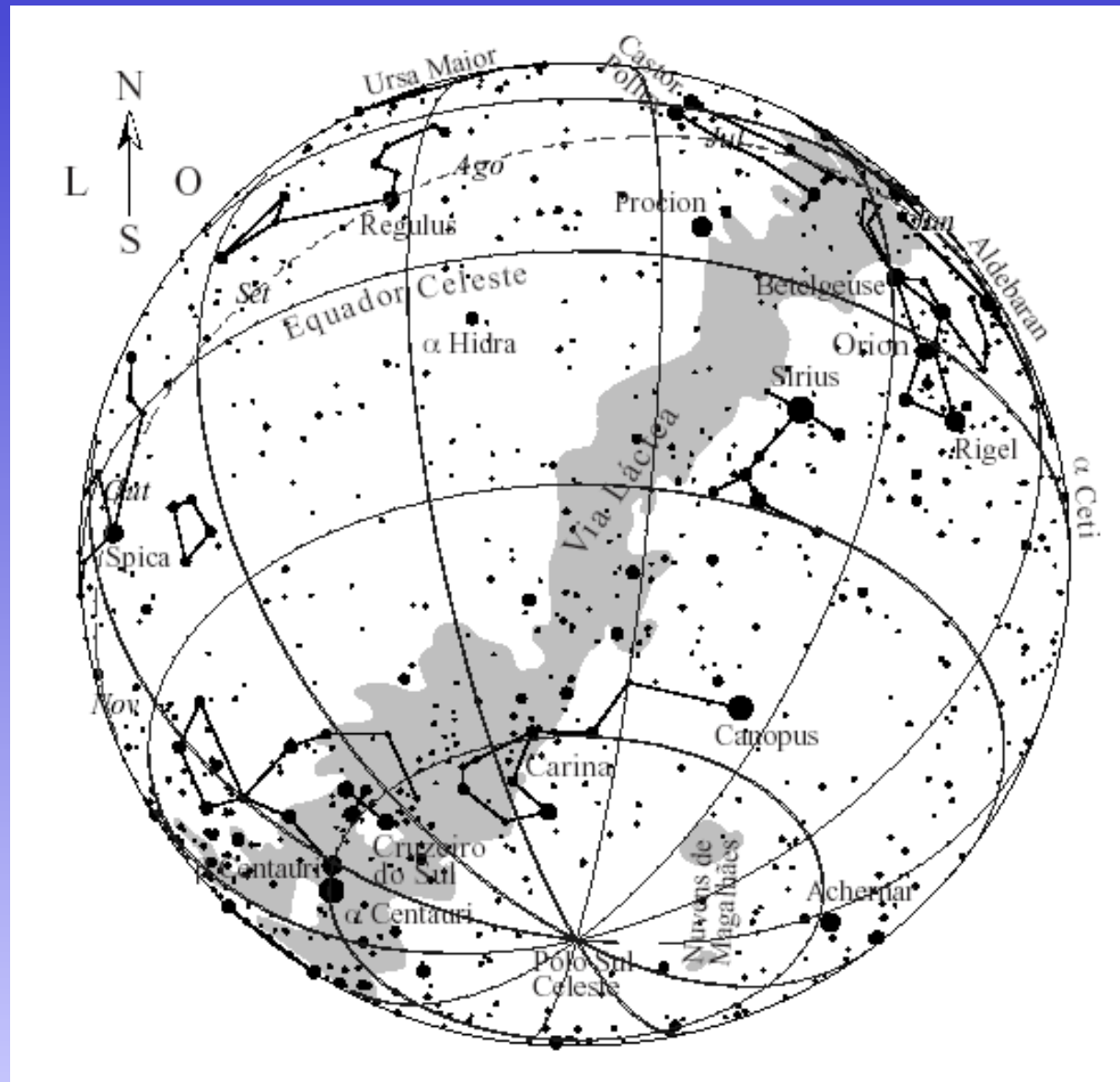
**Objeto
próximo**



Origens dos Sistemas de Referências

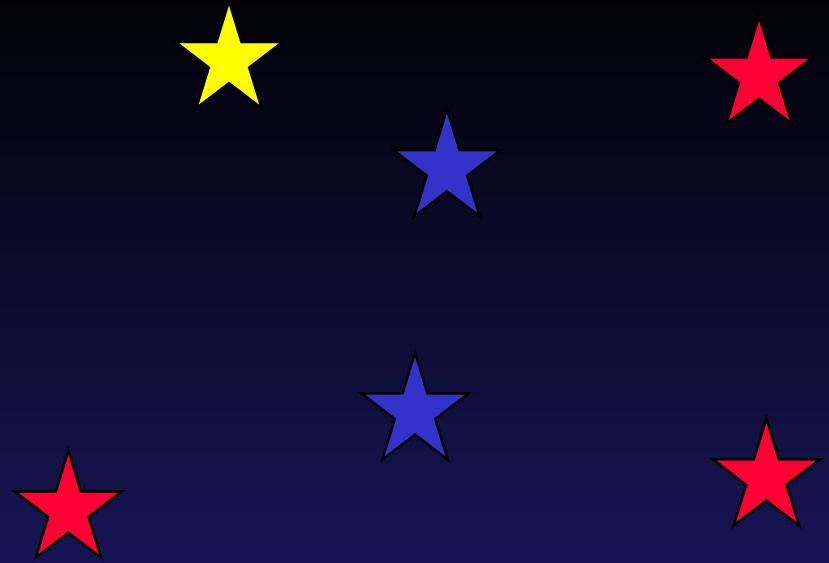


Céu Projetado na Esfera Celeste



Constelações

Constelação



É um grupo **convencional** de estrelas.

Número de constelações = 88

Alfabeto Grego

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Constelação de Orion

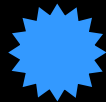
Betelgeuse



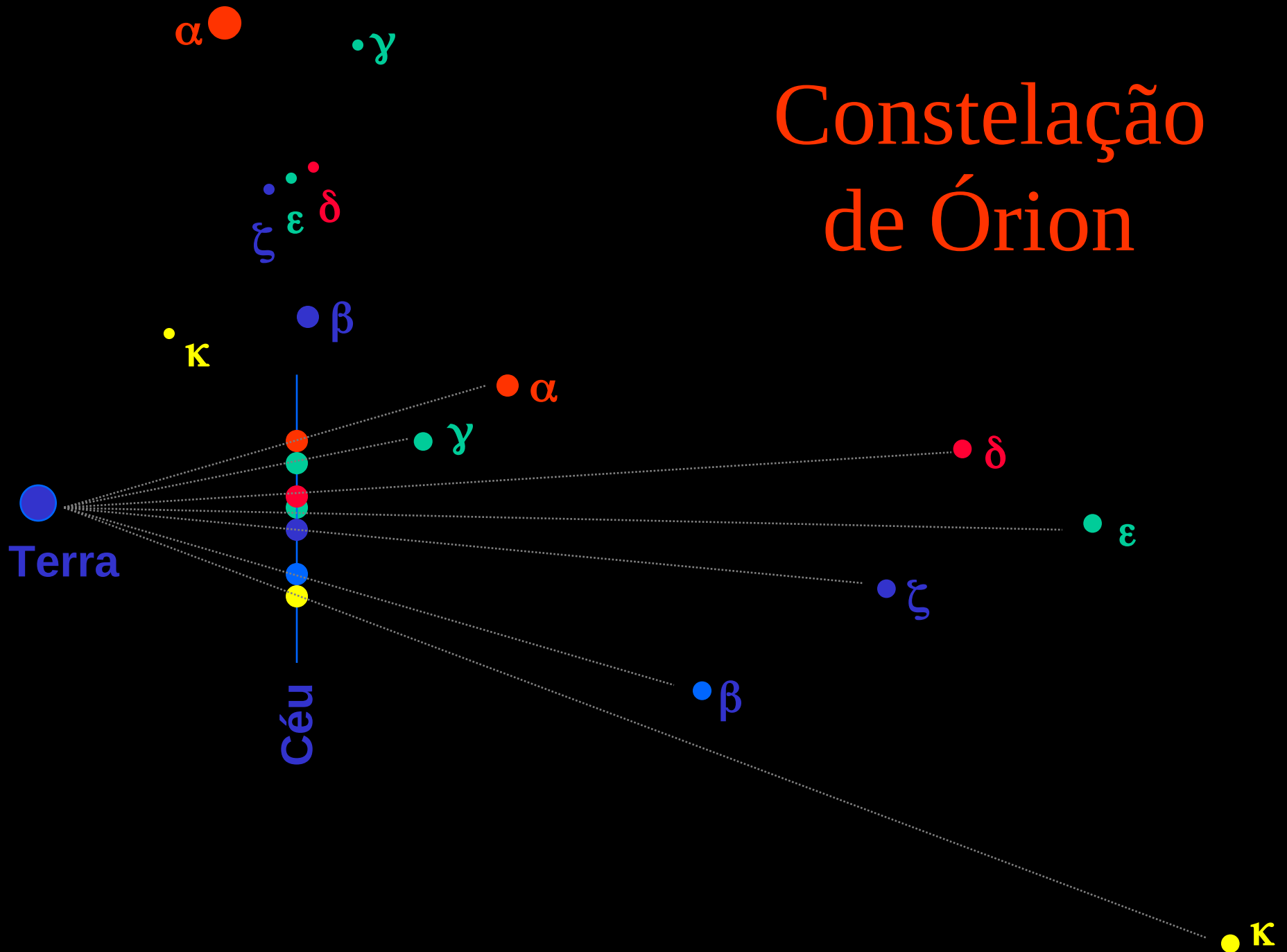
γ  Bellatrix

δ  Mintaka
 ϵ  Alnilan
 ζ  Alnitaka

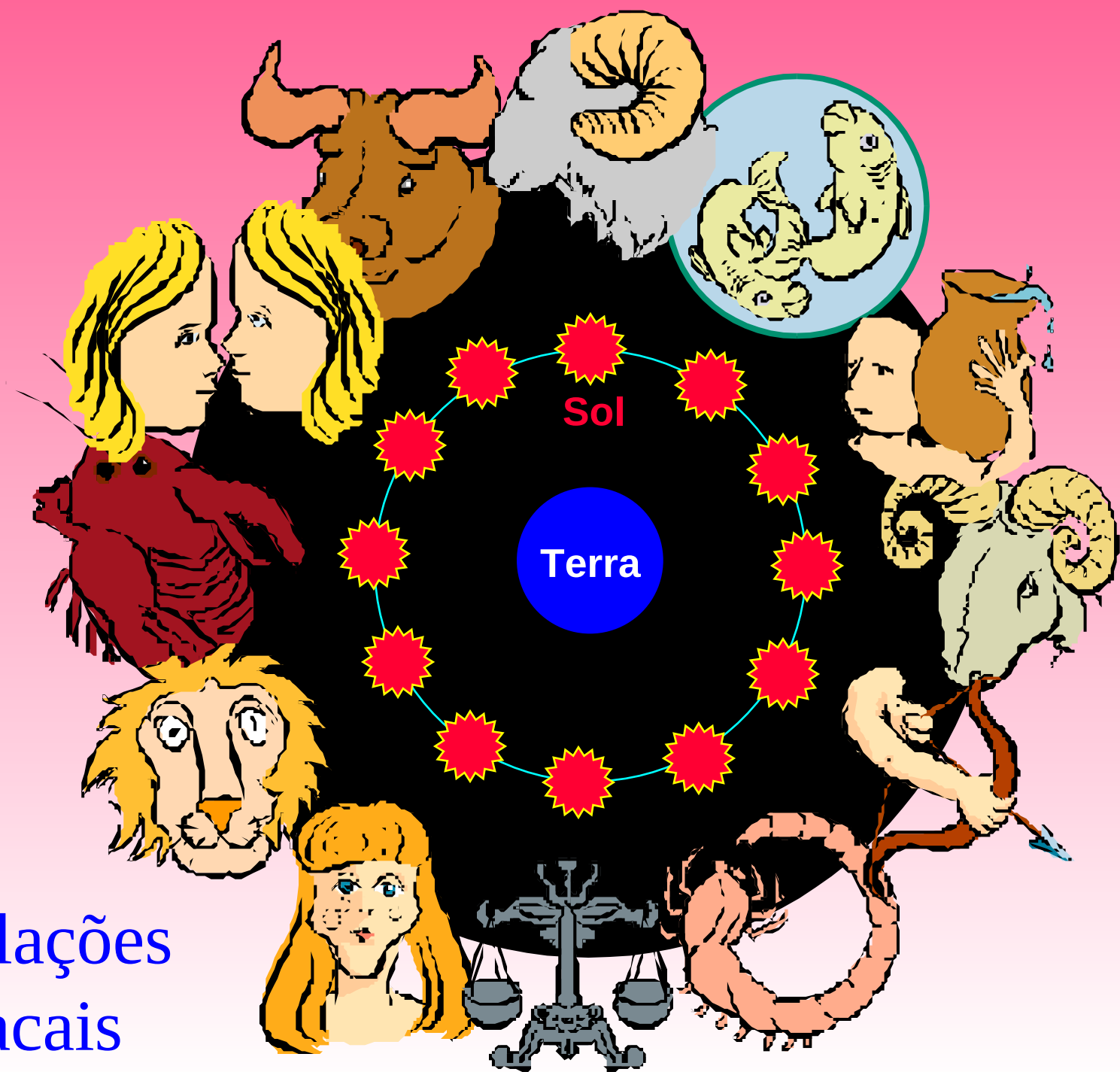
κ 
Saiph

β 
Rigel

Constelação de Órion

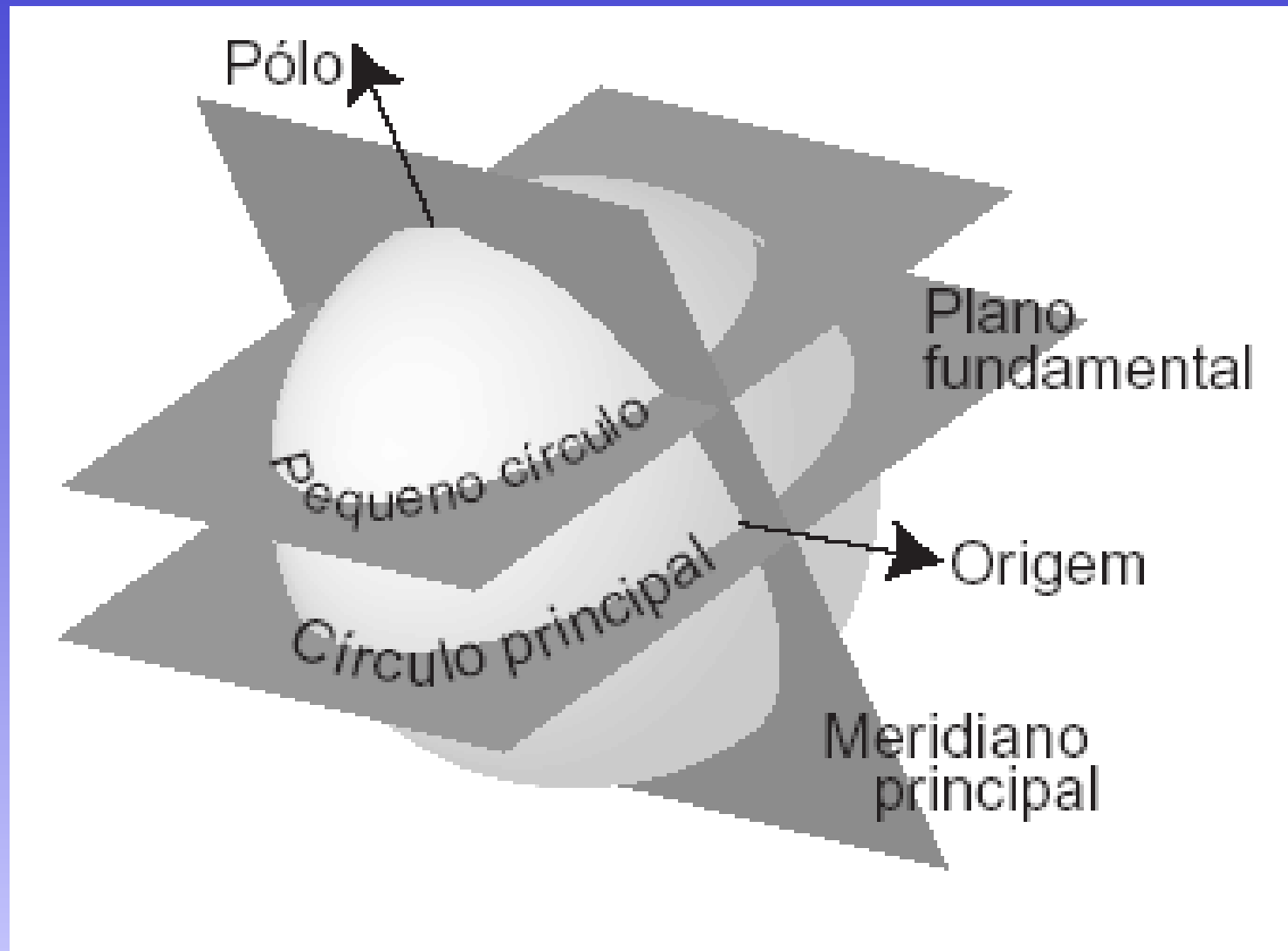


Constelações Zodiacais



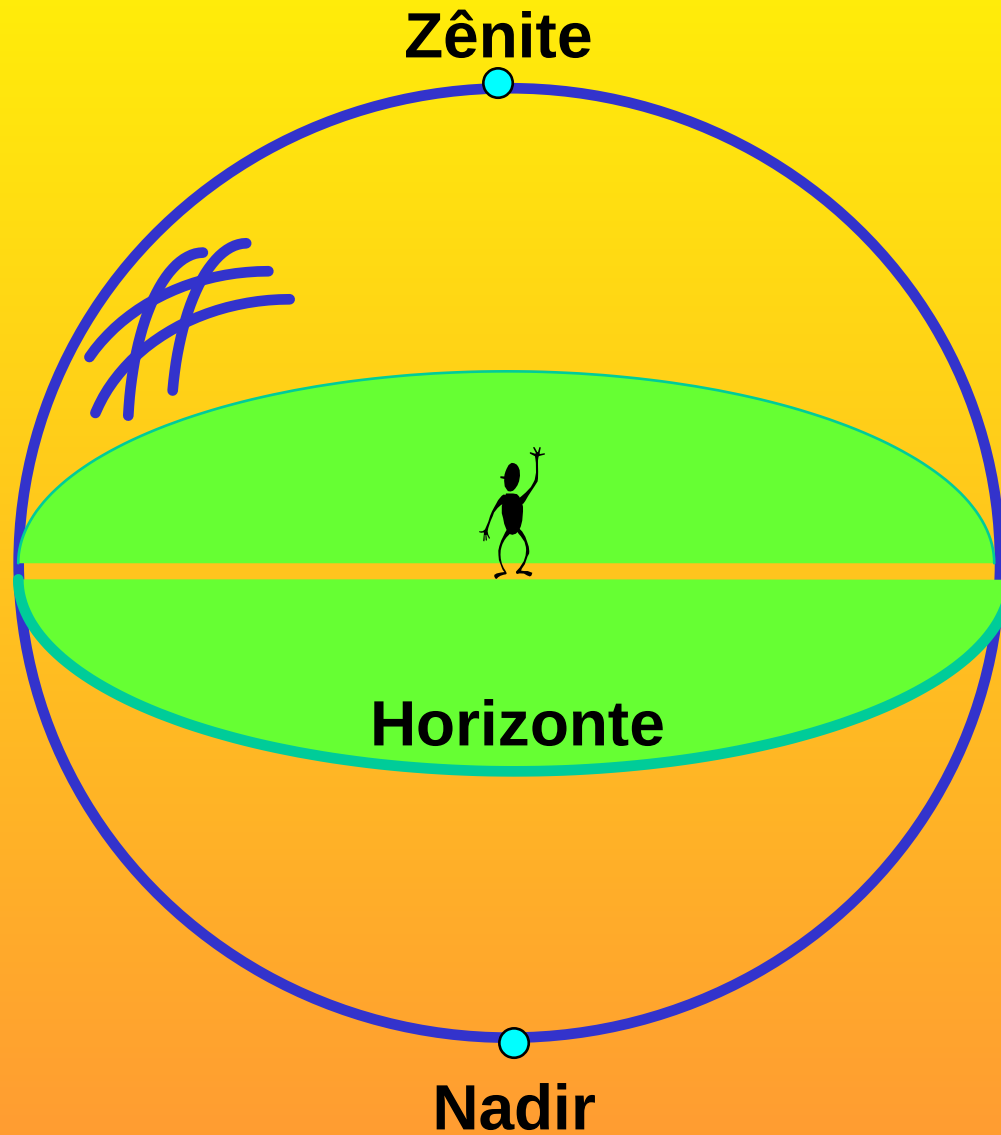
Sistemas de Coordenadas

Elementos de um Sistema de Coordenadas Esféricas

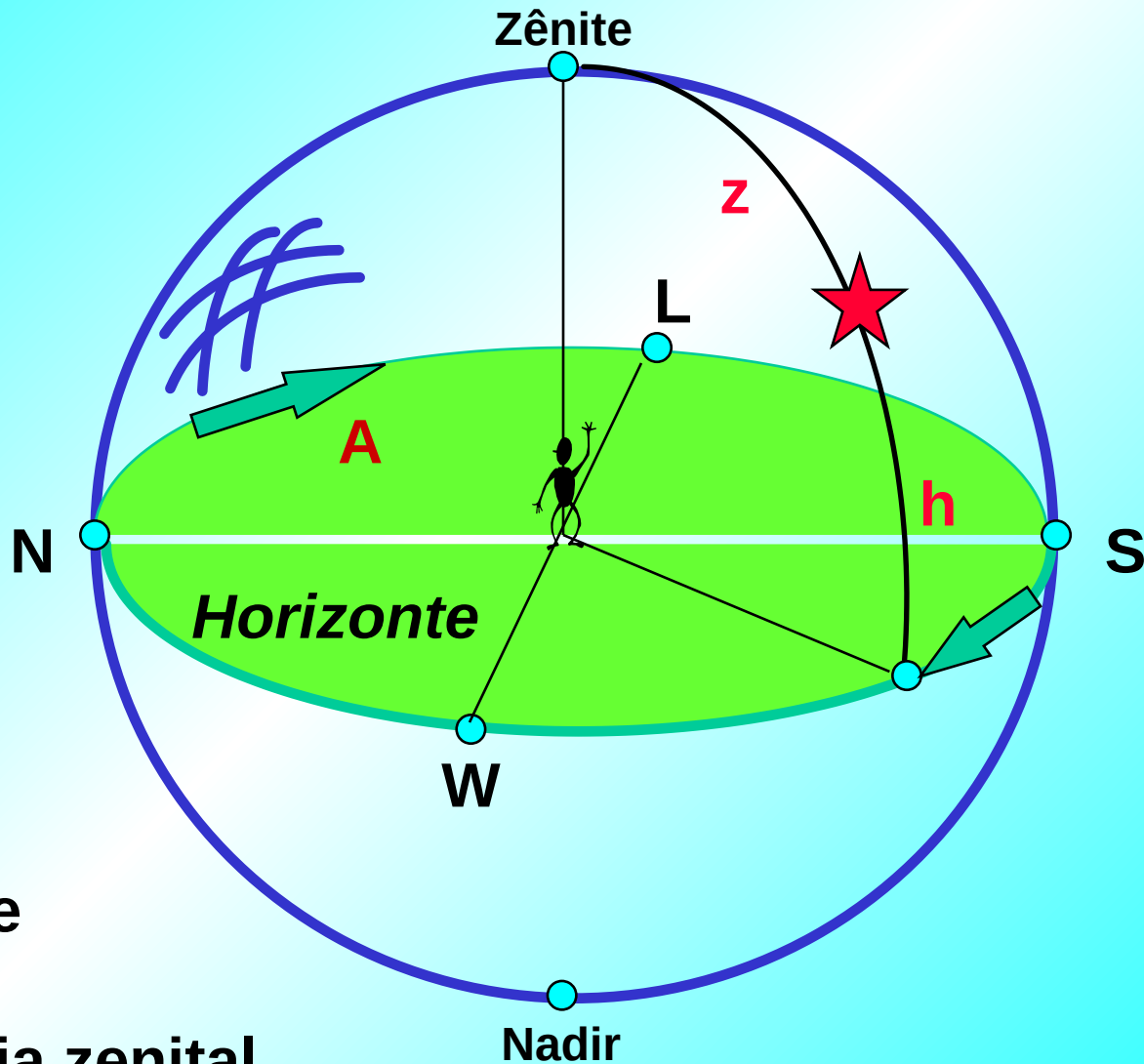


Sistema Altazimutal

Sistema Local



Coordenadas Altazimutais



A = azimuth

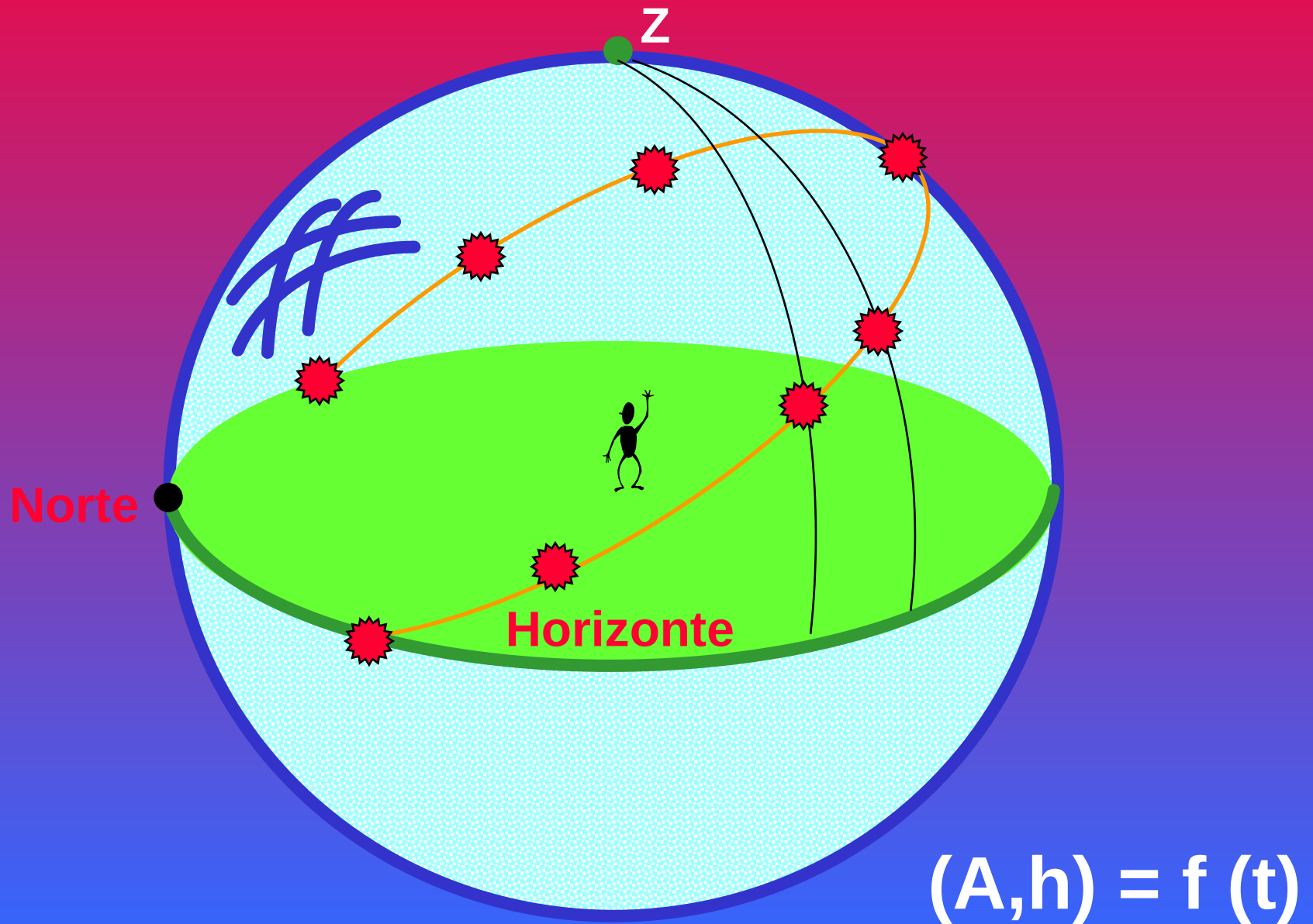
h = altura

z = distância zenital

★ A, h
★ A, z

Desvantagem do sistema
horizontal local

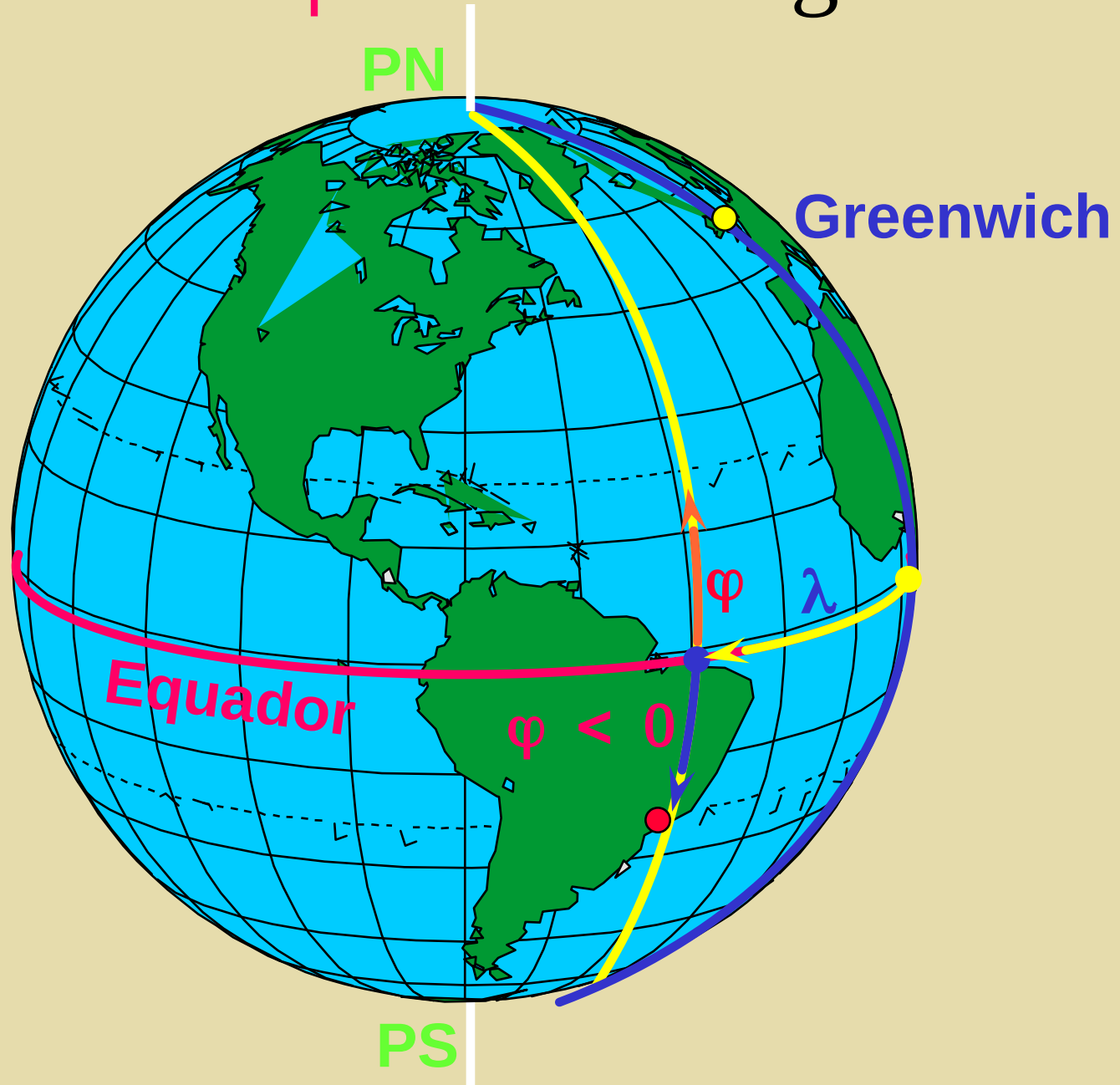
Movimento aparente do Sol



A Esfera Terrestre

Latitude φ

Longitude λ



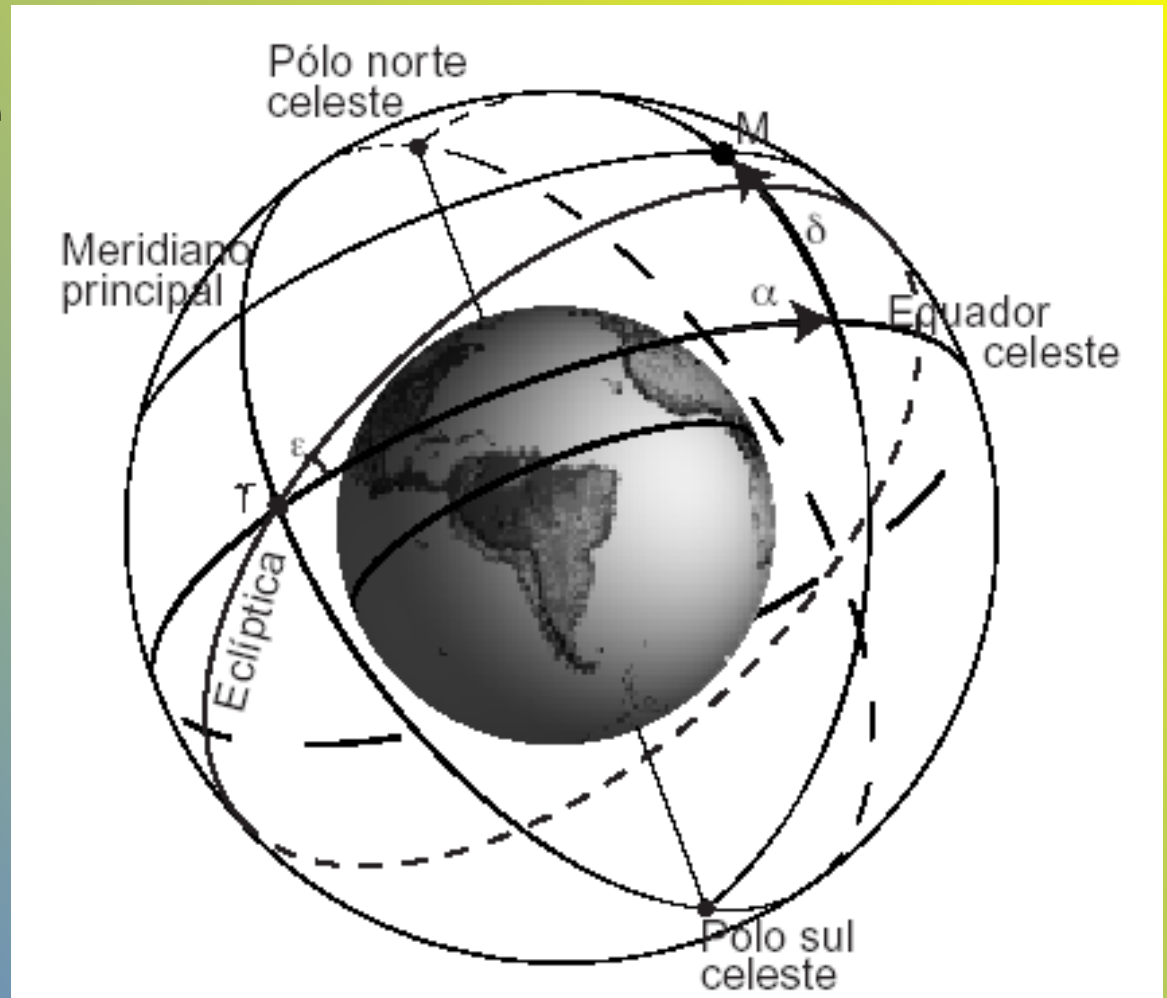
Sistema Equatorial

Sistema Equatorial de Coordenadas

★ (α, δ)

α = ascensão reta

δ = declinação



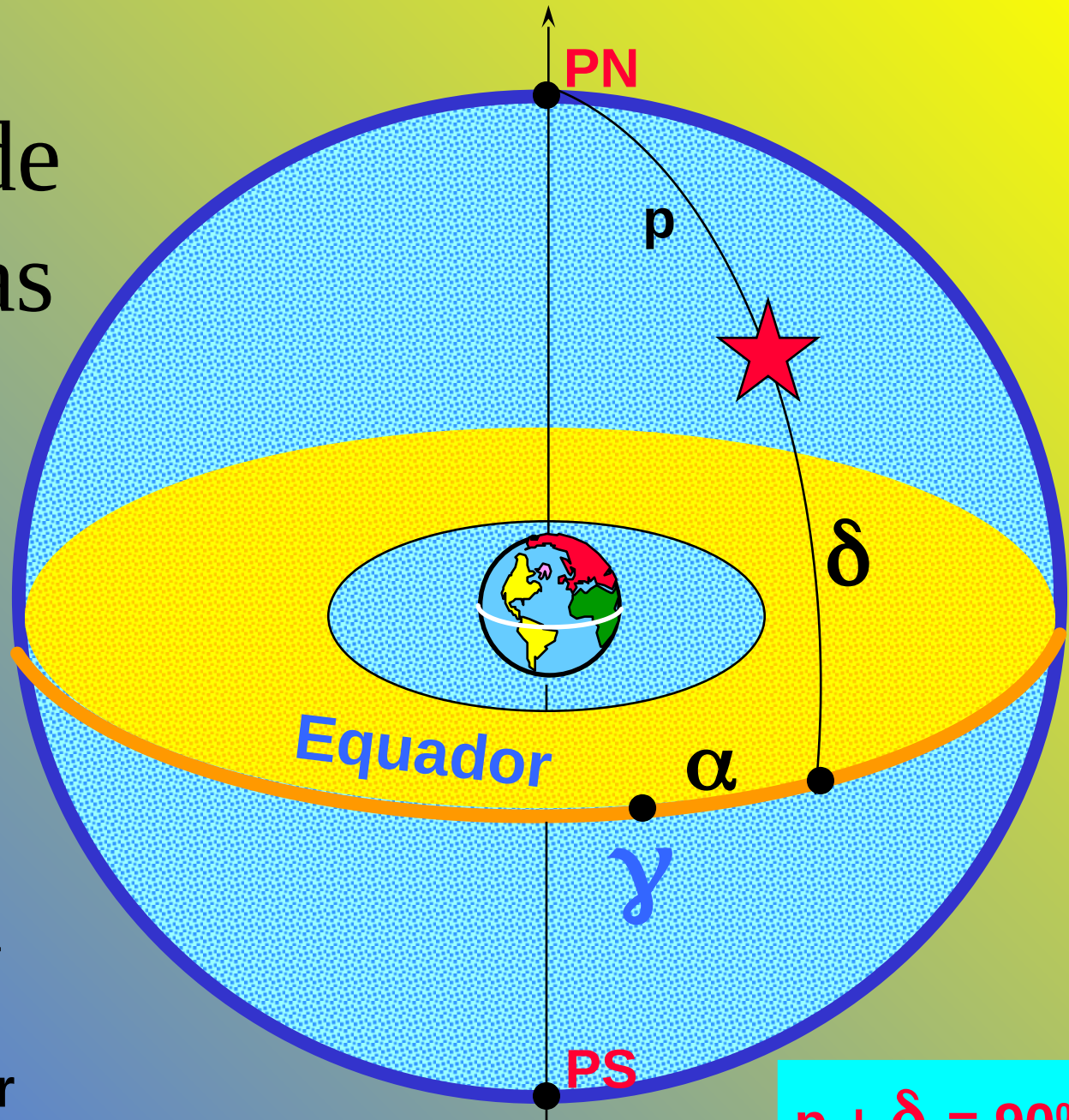
Sistema Equatorial de Coordenadas

★ (α, δ)

α = ascensão reta

δ = declinação

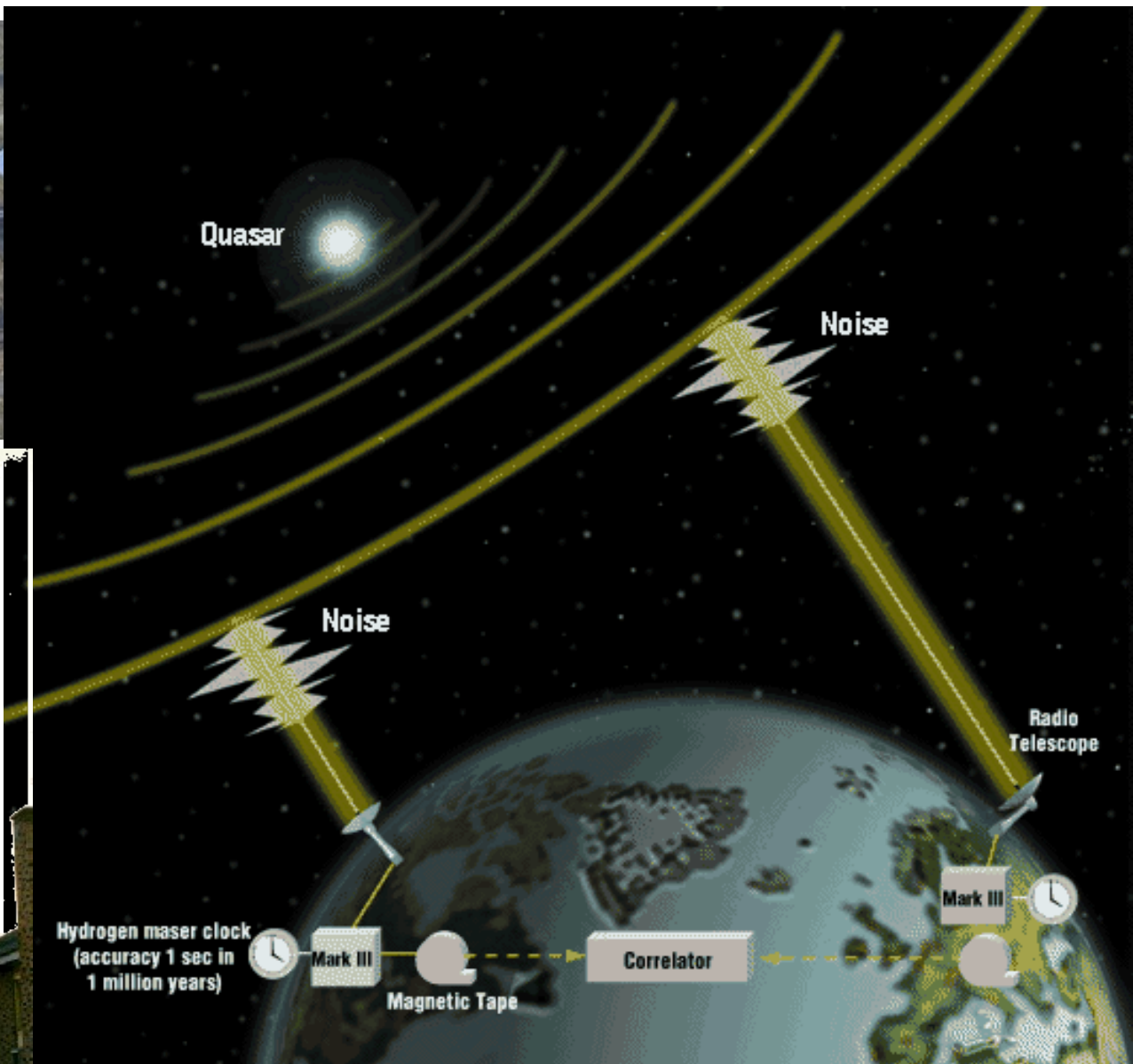
p = distância polar

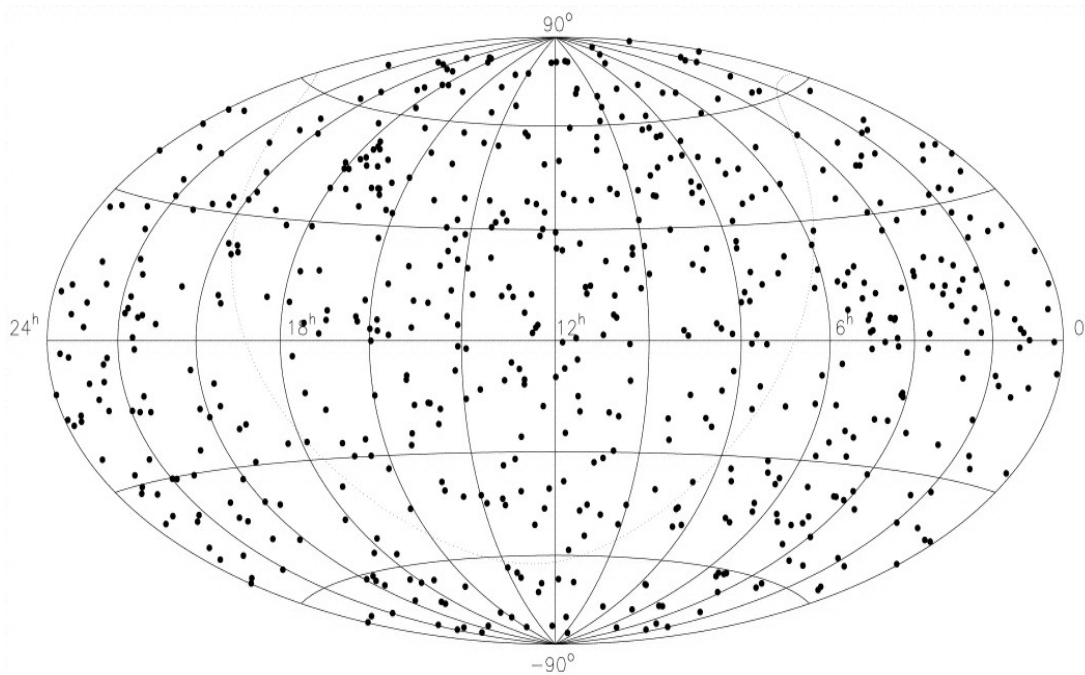


$$p + \delta = 90^\circ$$

Sistema ICRS “International Celestial Reference System”

(Sistema Internacional
de Referência Celeste)



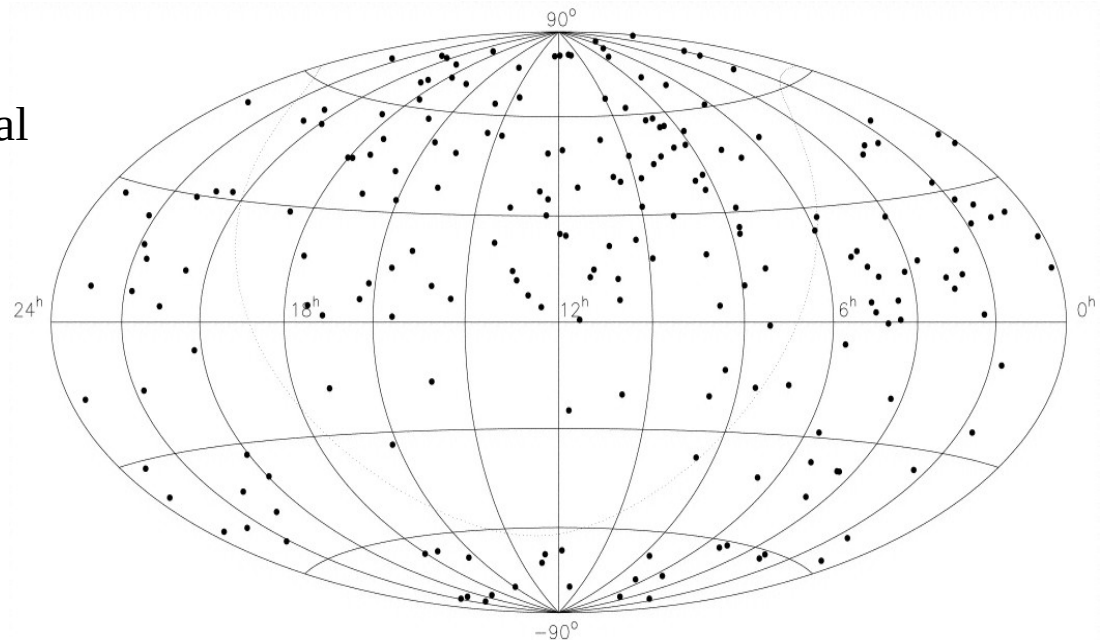


Sistema Internacional de Referência Celeste (**ICRS**) :

Definido pela direção (posição) de objetos pontuais, sem movimento próprio (**quasares!**)

Referencial Celeste Internacional (**ICRF**) - 1998 :

- Observações VLBI
- 212 quasares compactos
- 455 fontes candidatas
- precisão melhor que 1mas
- 1 mas = 0",001



Fim