



ege üniversitesi
SÜREKLİ EĞİTİM MERKEZİ



Evren Ne Kadar Büyük?

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E.Ü. Astronomi ve Uzay Bilimleri Bölümü

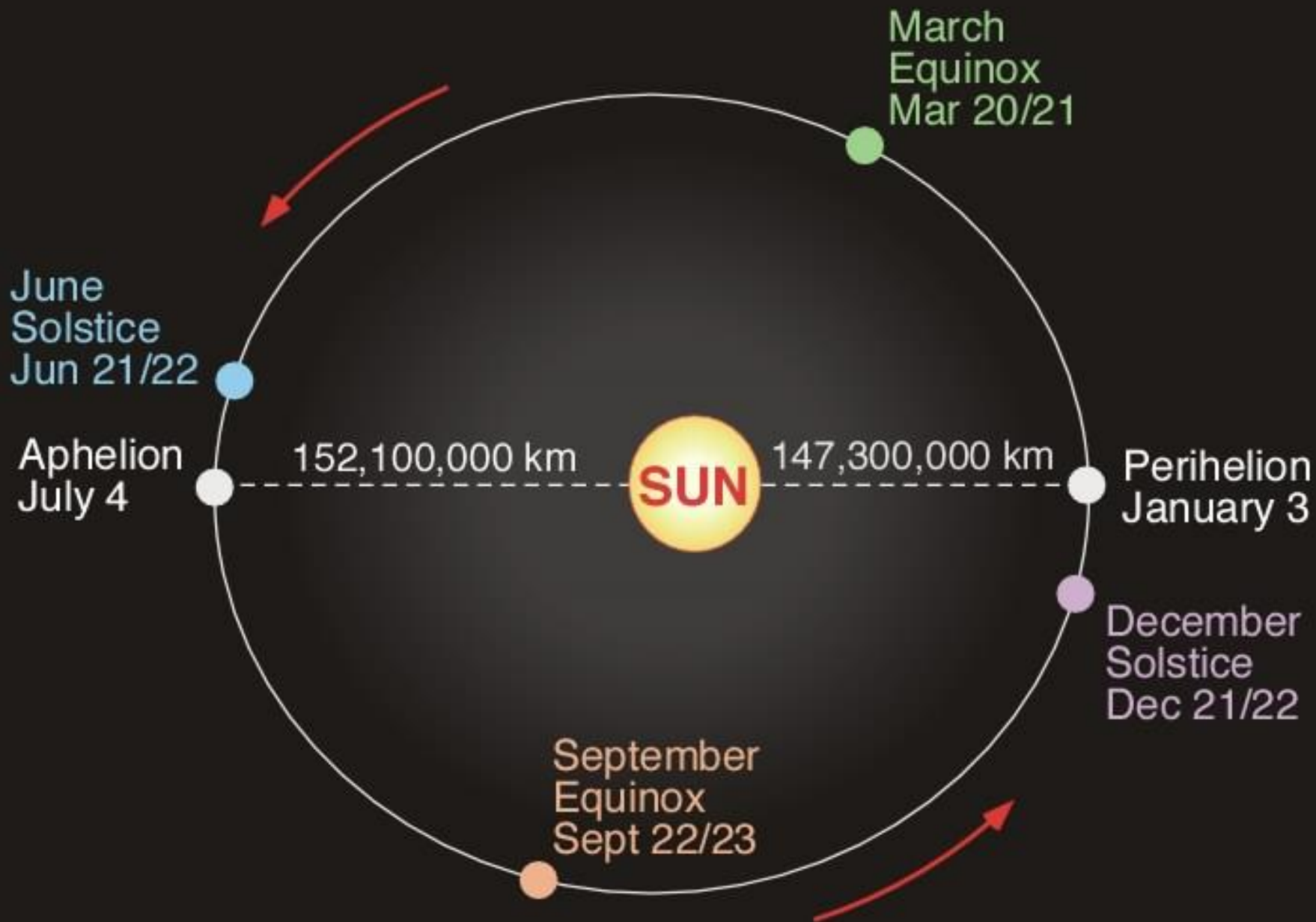
Uzaklık Birimleri

- Astronomik Birim (AB)
- Işık Yılı (iy)
- Parsek (pc)

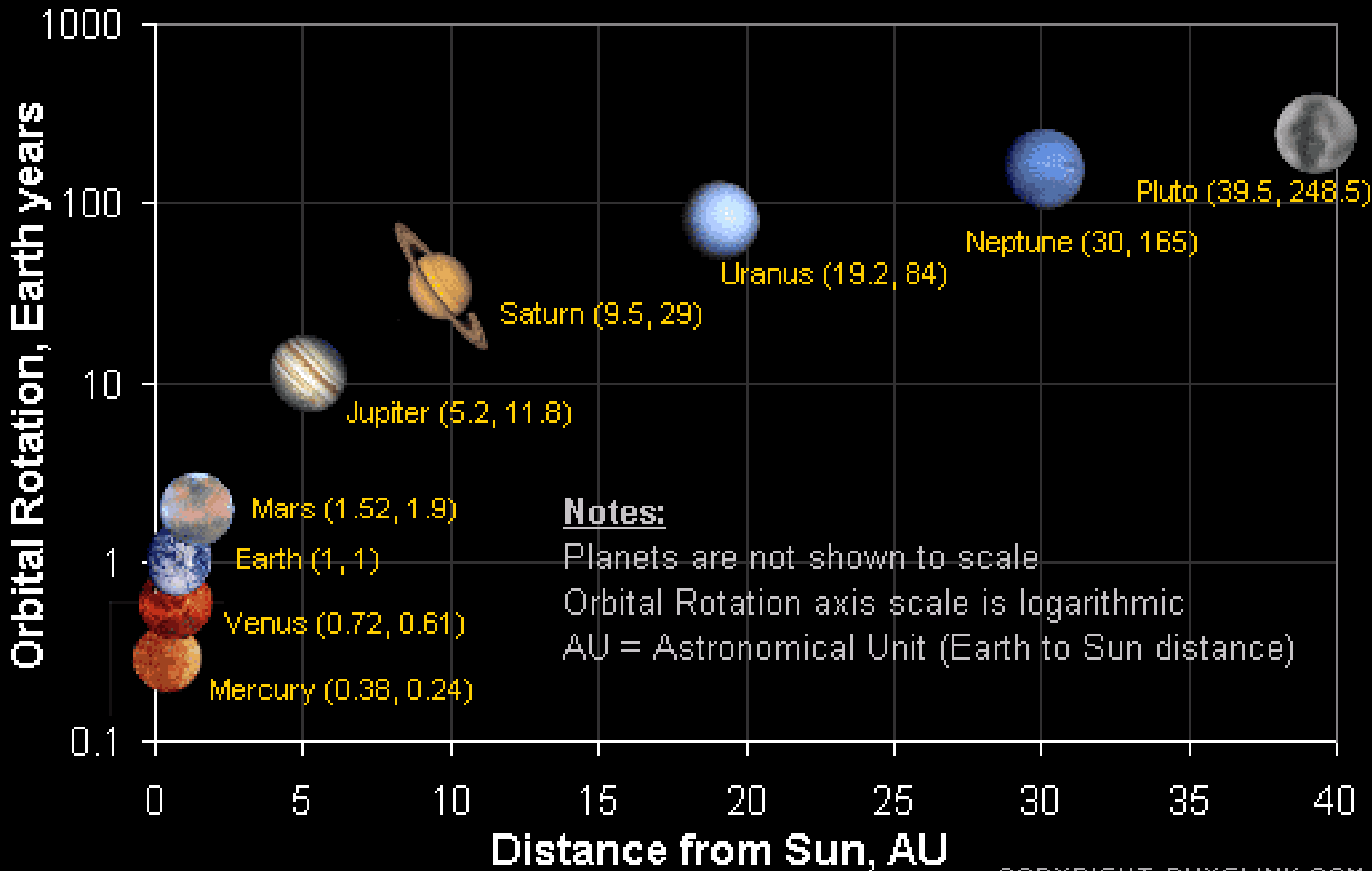
Astronomik Birim

- Ortalama Yer-Güneş Uzaklığı
149 600 000 km = 1 AB

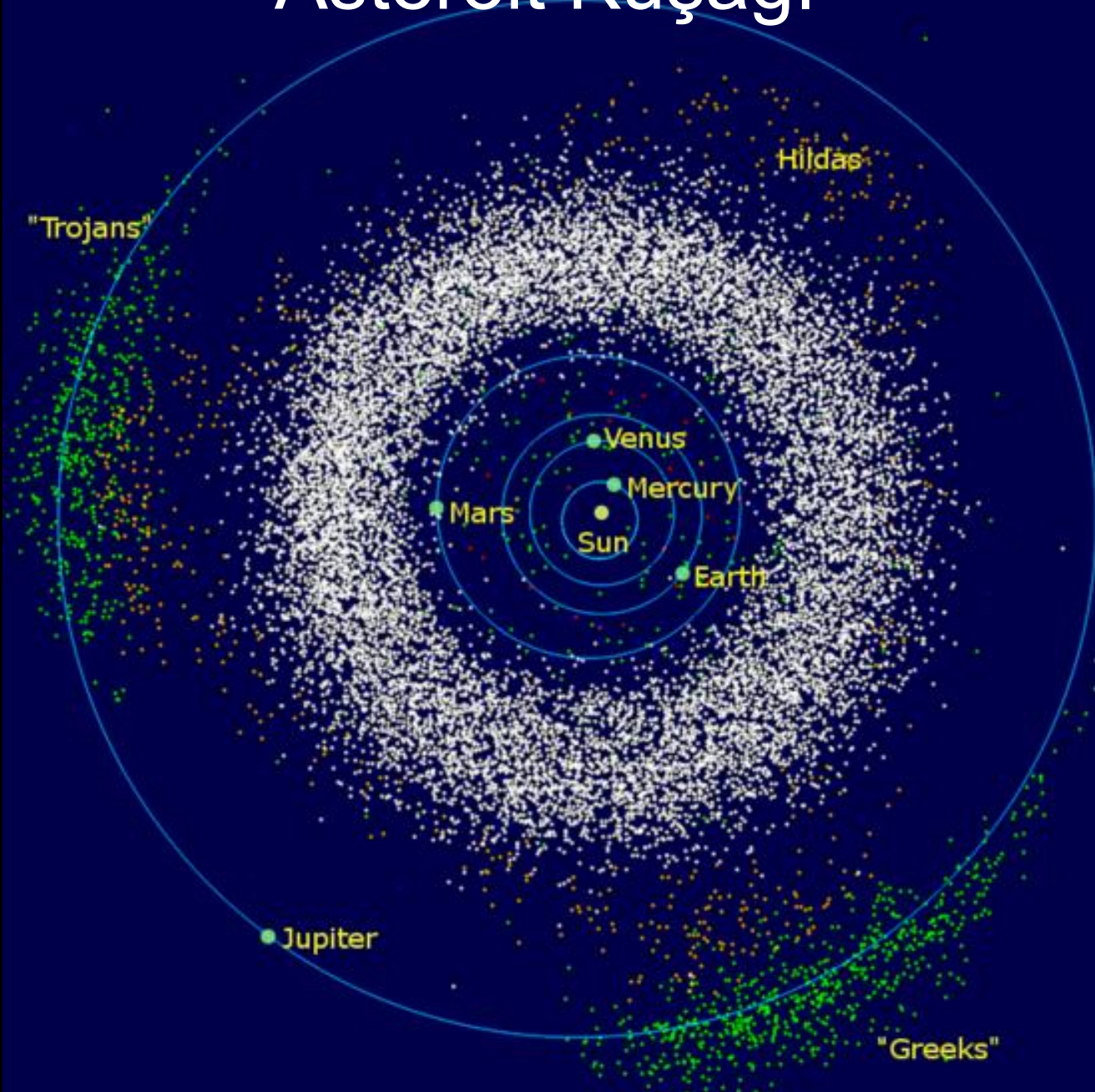




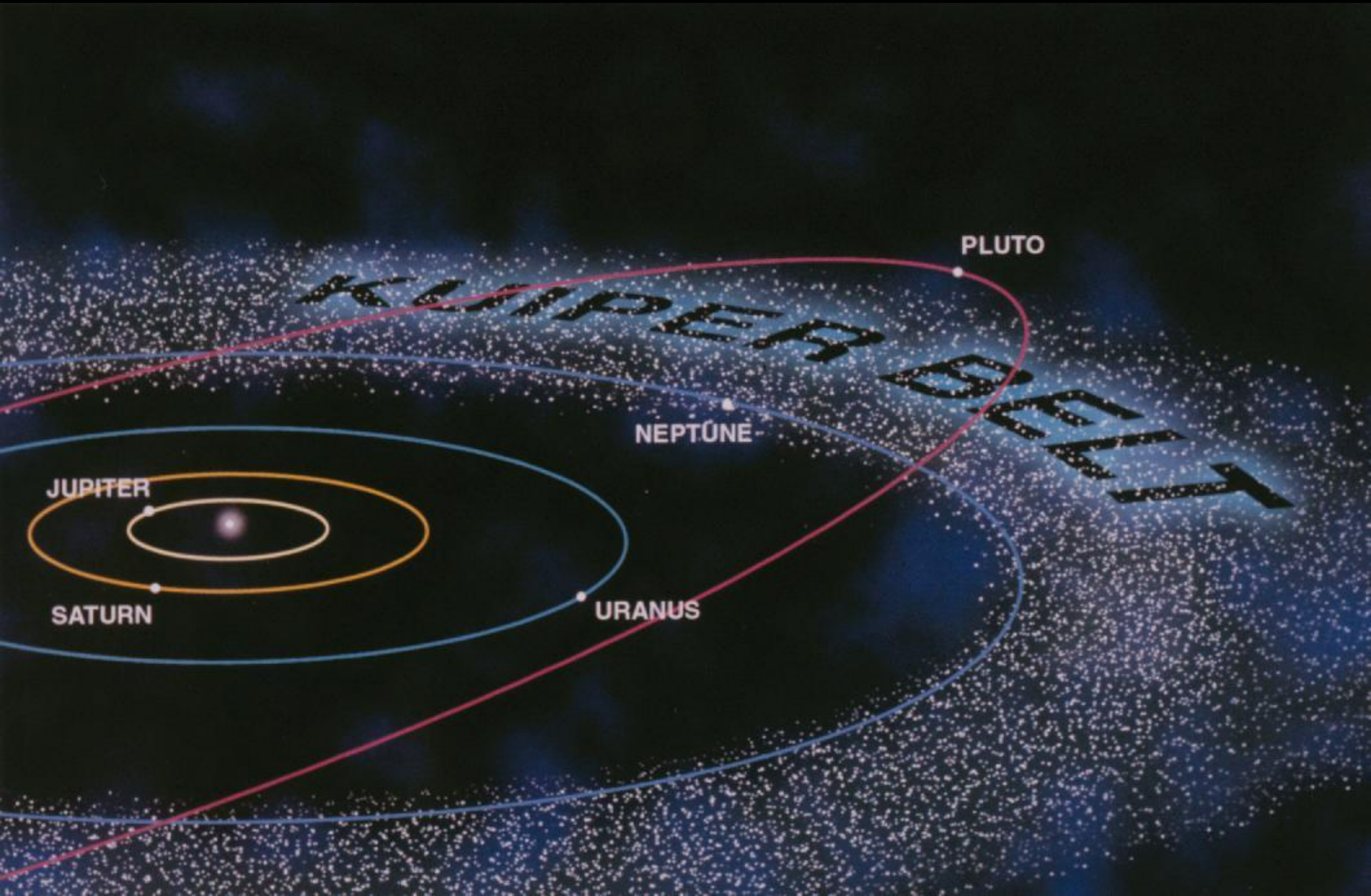
Orbital Rotation Periods vs Distance from the Sun



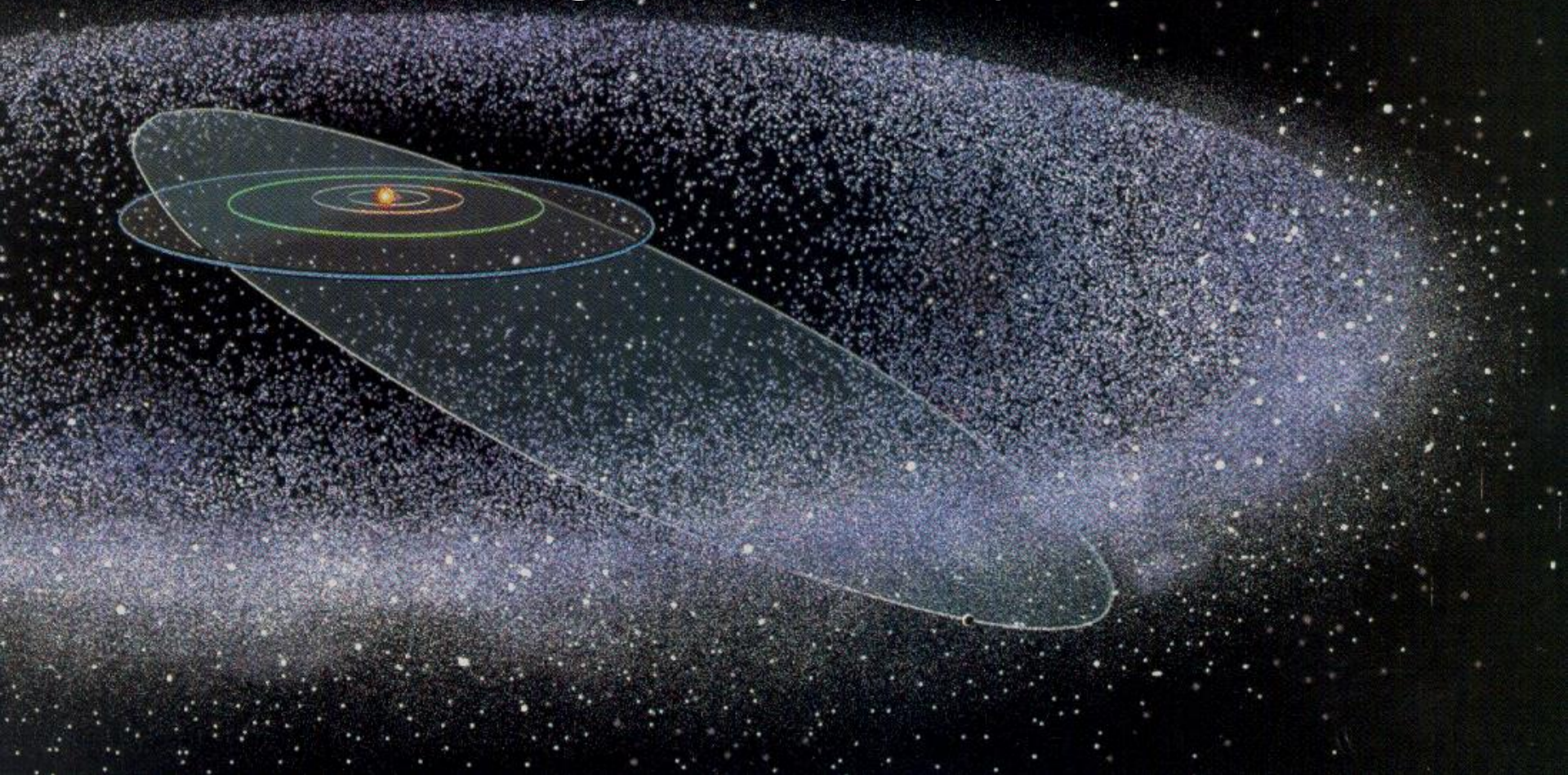
Asteroid Kuşağı



Kuiper Kuşaađı



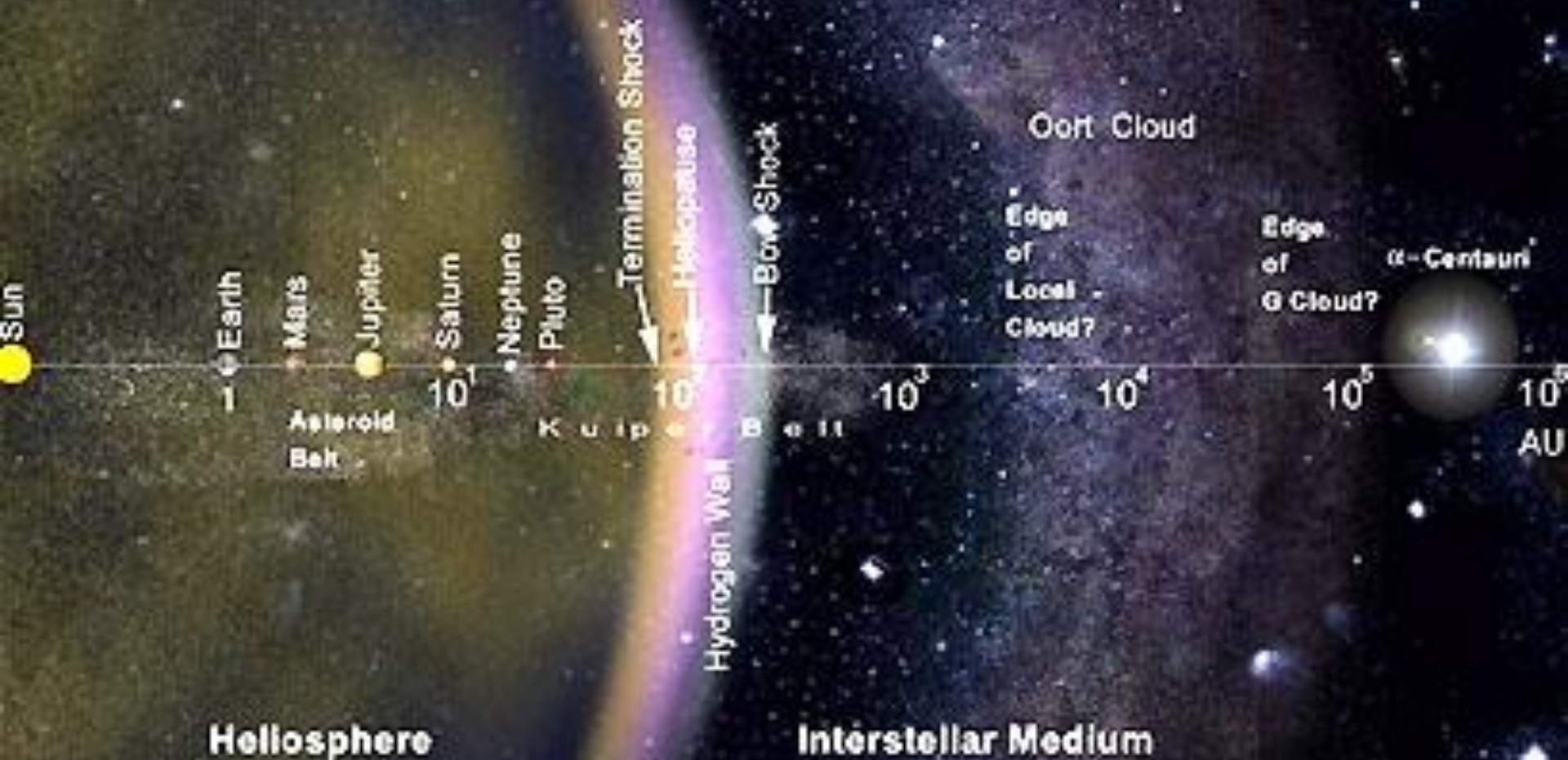
Oort Bulutu



Işık Yılı

- Işık hızı = 300 000 km/s
- Işığın bir yılda aldığı yol =
- $300\ 000 \times 60 \times 60 \times 24 \times 365.25$ km

Interstellar Distances - In Perspective



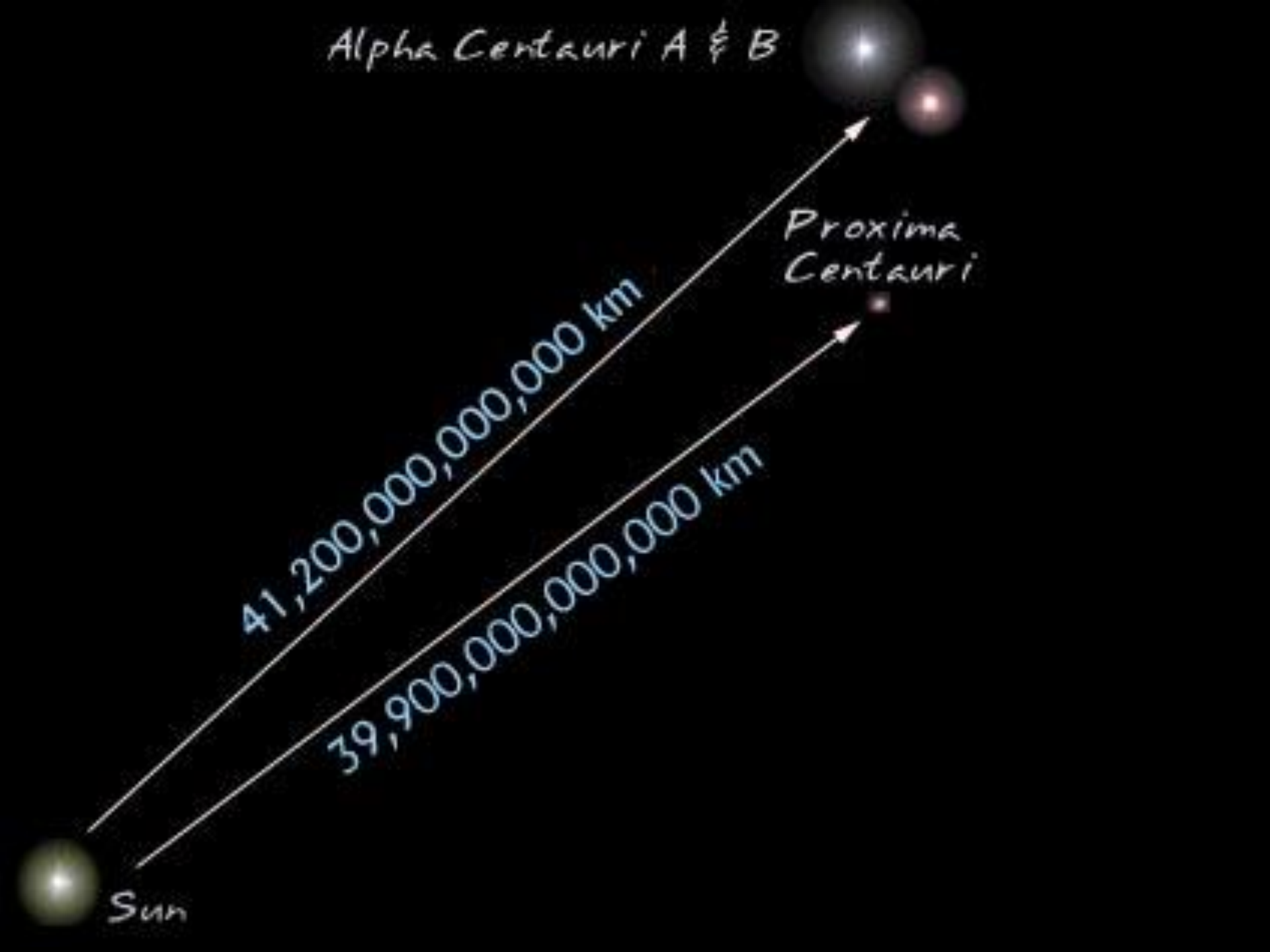
Alpha Centauri A & B

Proxima Centauri

Sun

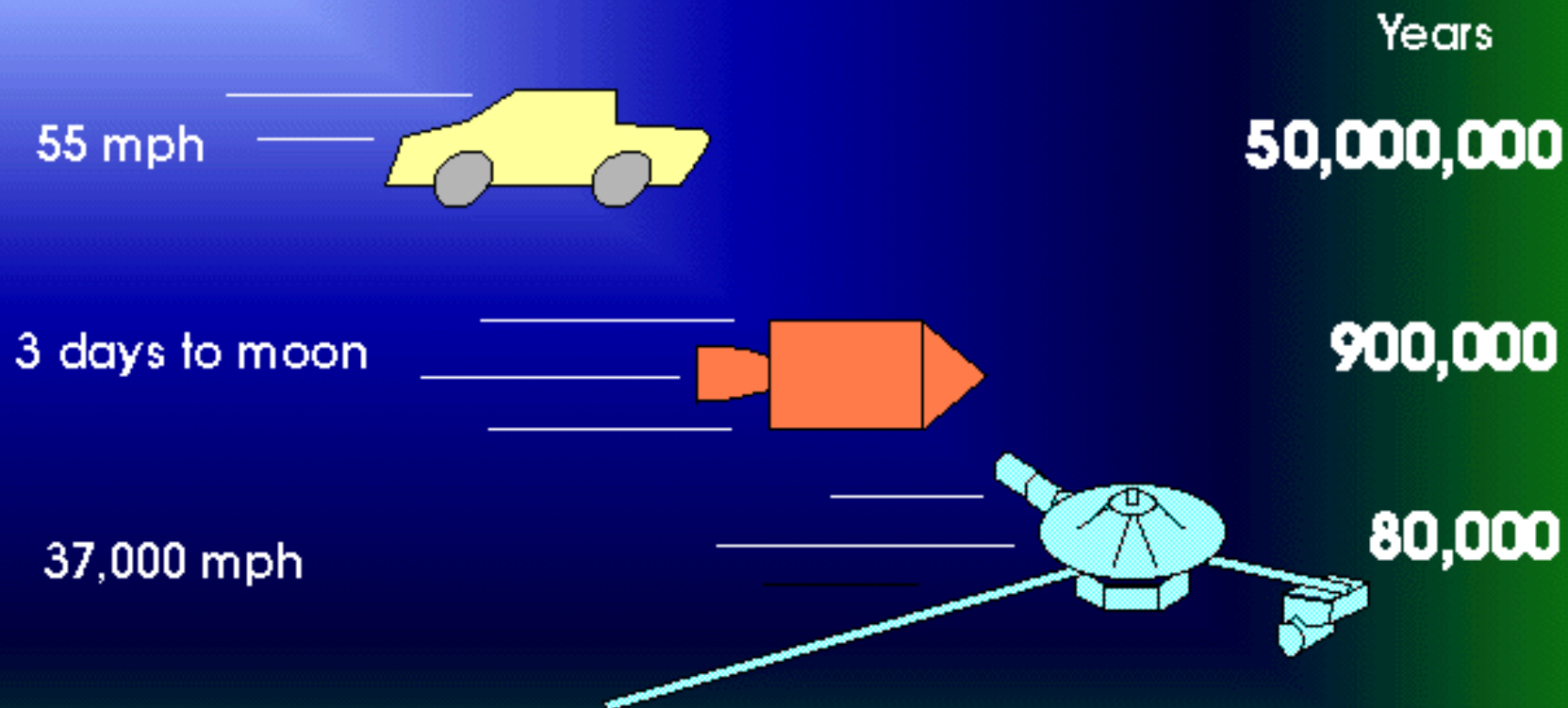
41,200,000,000 km

39,900,000,000 km



Enormous Journeys

Examples of trip times to reach Centauri Cluster...



*Conclusion: we need a
Light Speed Breakthrough*

Sun



Alpha Centauri A



Alpha Centauri B



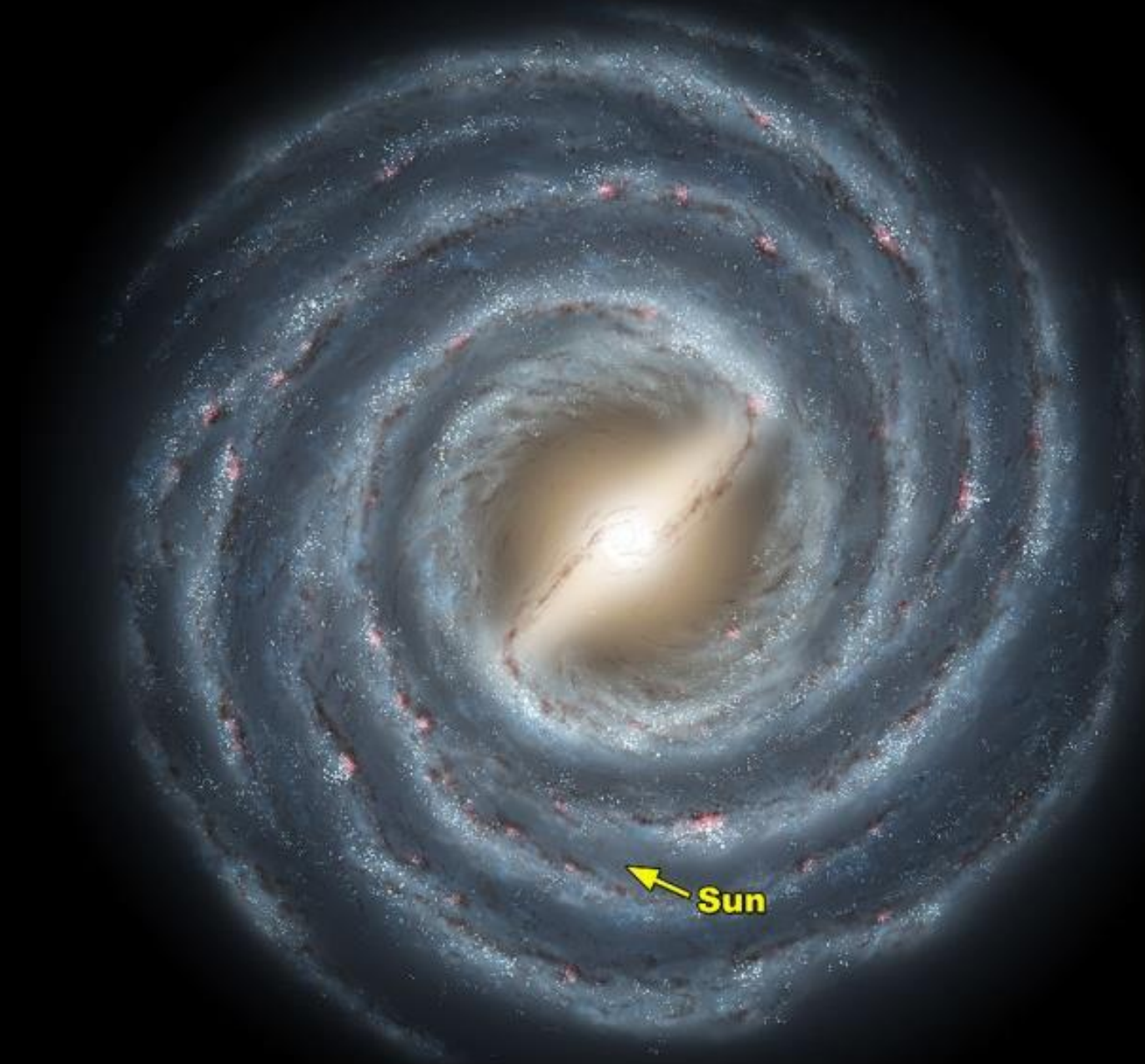
**Proxima
Centauri**



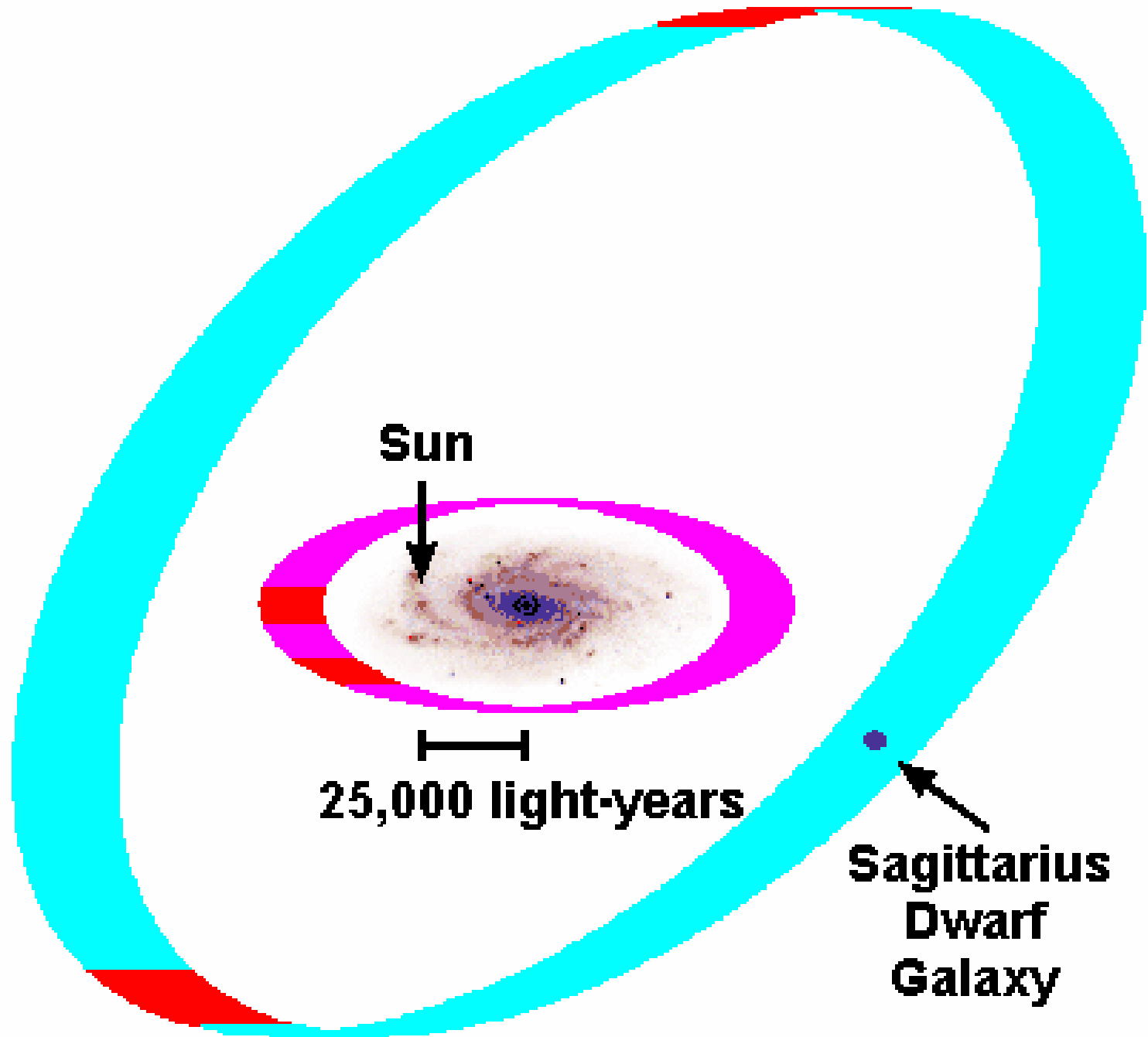




925,000,000,000,000,000 km

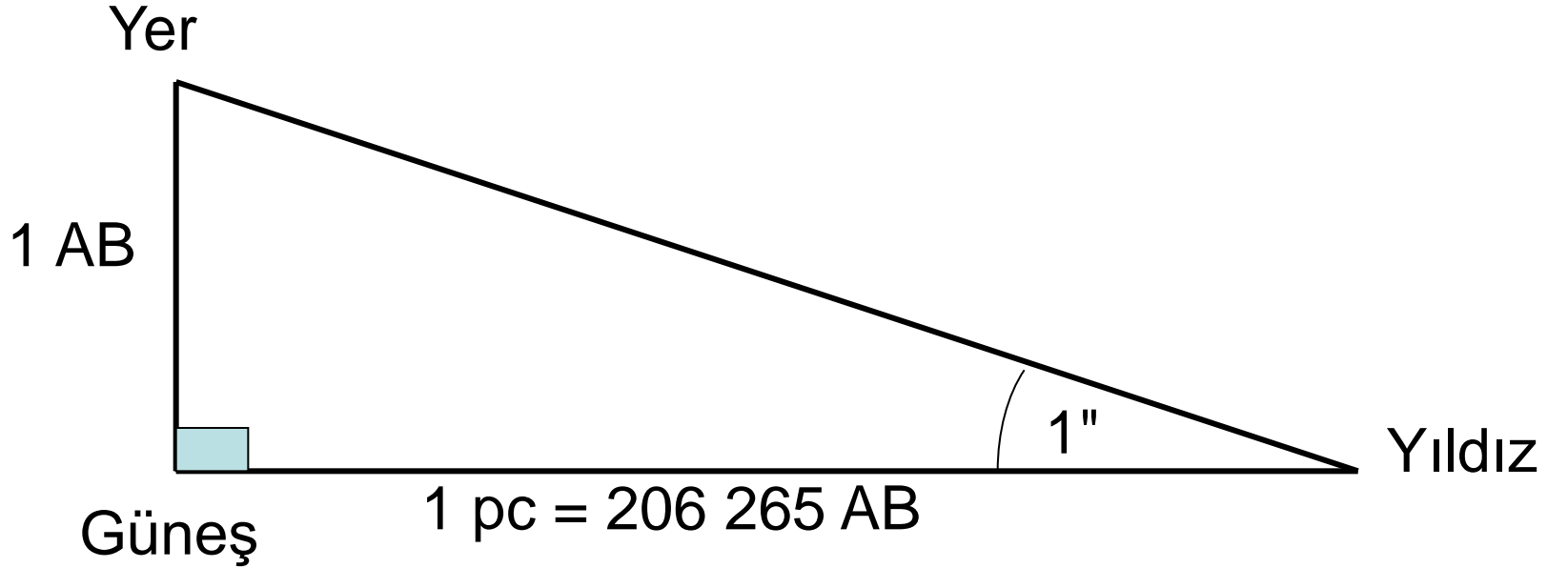


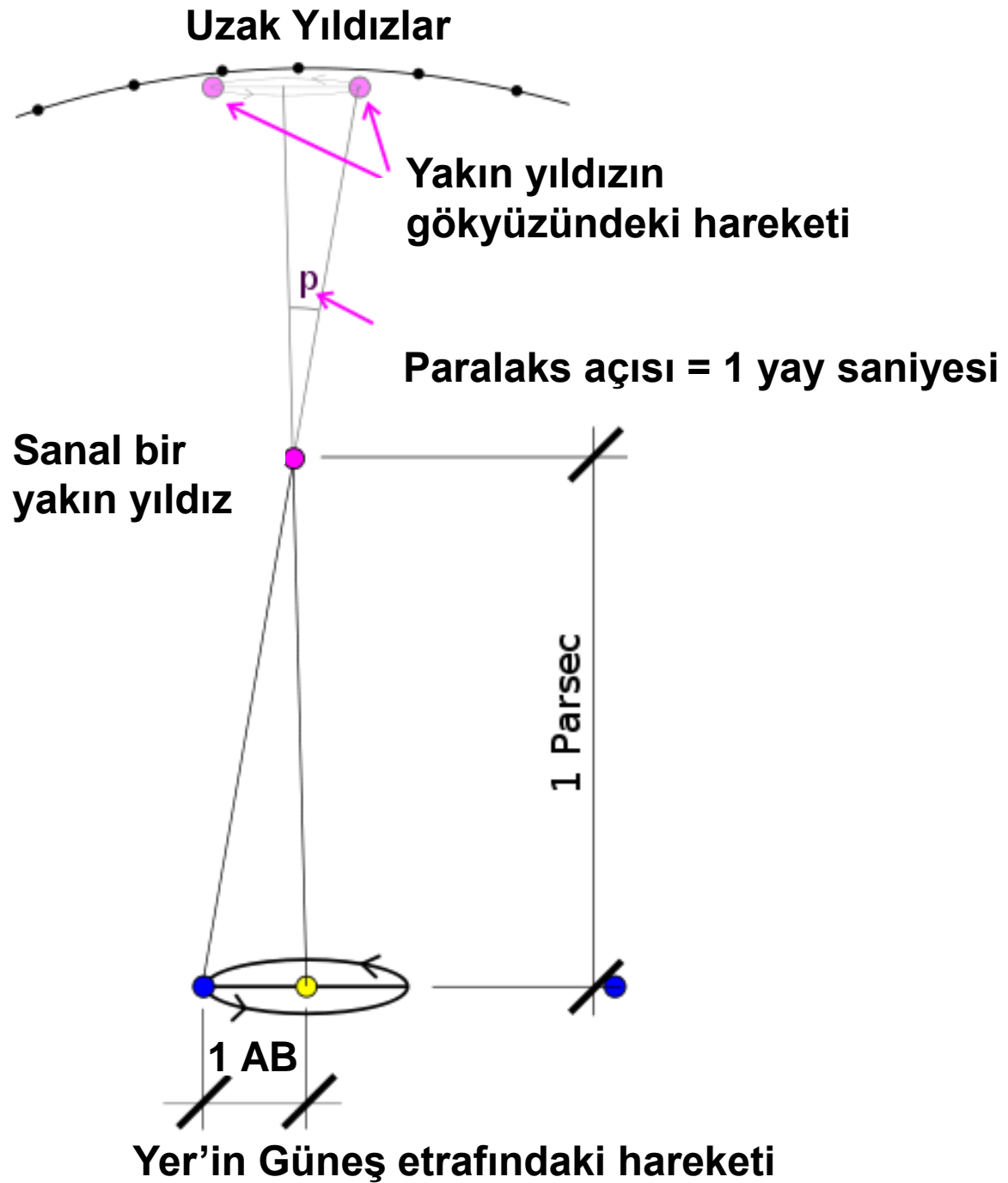
Sun



Parsek

1 parsek = 3.26 ışık yılı





Uzak Yıldızlar

Yakın yıldızın gökyüzündeki hareketi

p

Paralaks açısı = 1 yay saniyesi

Sanal bir yakın yıldız

1 Parsec

1 AB

Yer'in Güneş etrafındaki hareketi



Magellan's Voyage Around The World

1519 - 1521

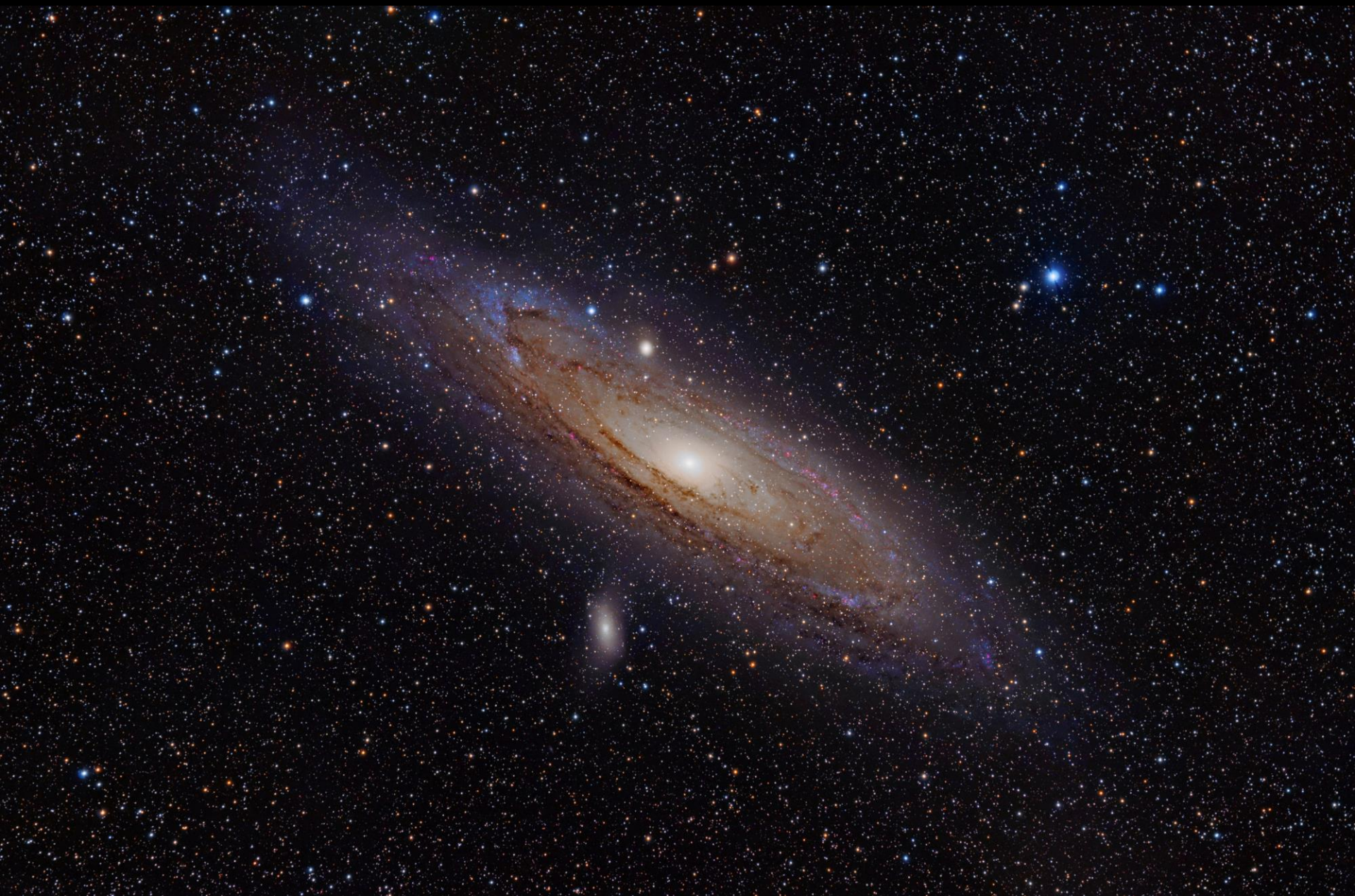


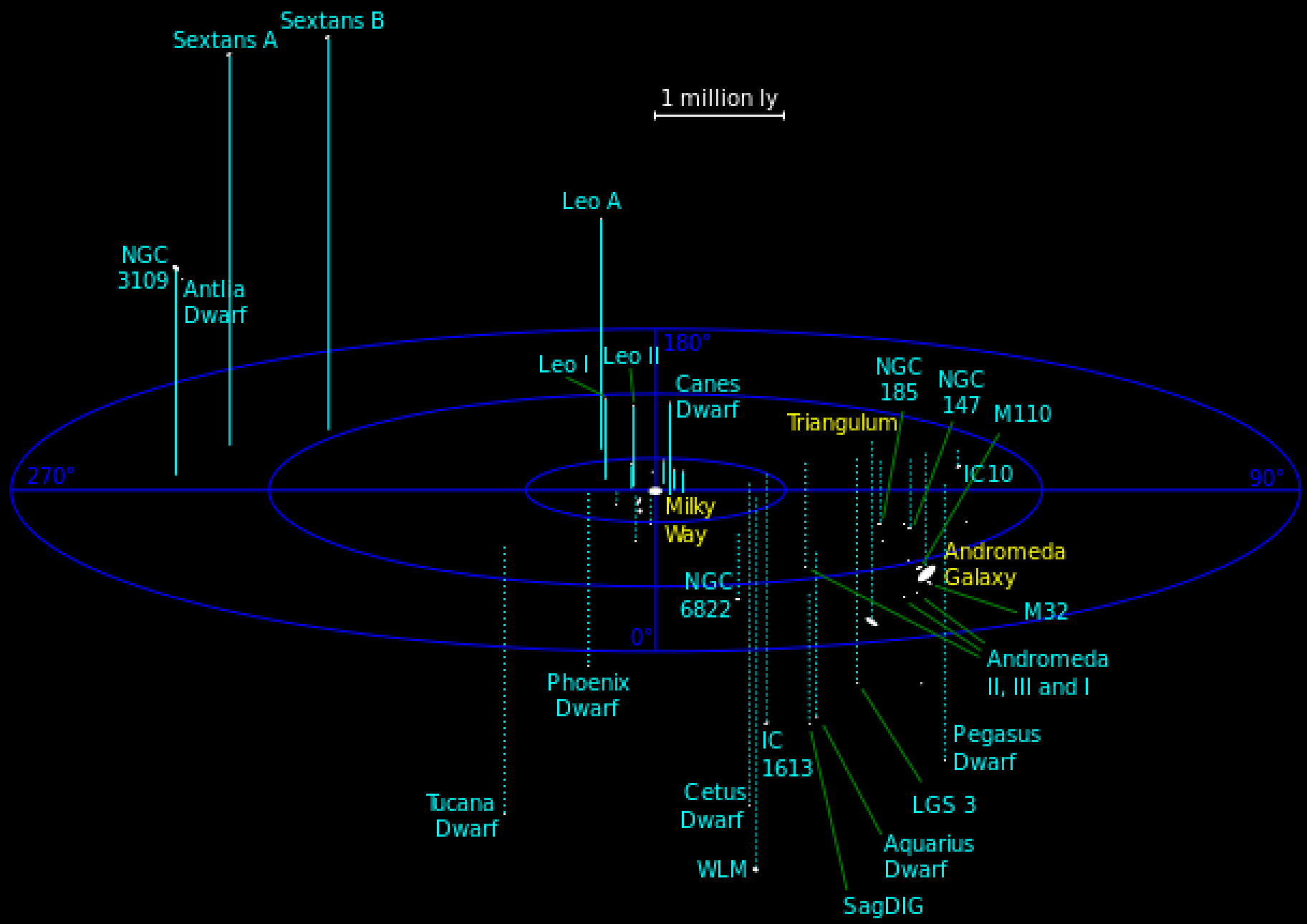
Büyük ve Küçük Magellan Bulutları



Akira Fujii/David Malin Images

Andromeda





The Estimated Size of the Universe

