

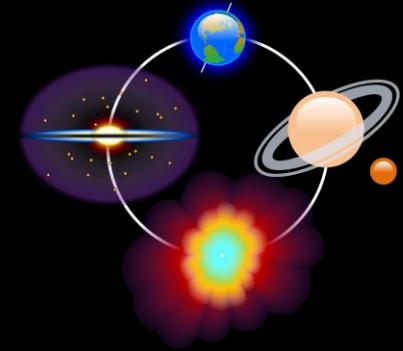


Centro de
Divulgação
Científica e
Cultural



Observatório Dietrich Schiel

Introdução à Astronomia

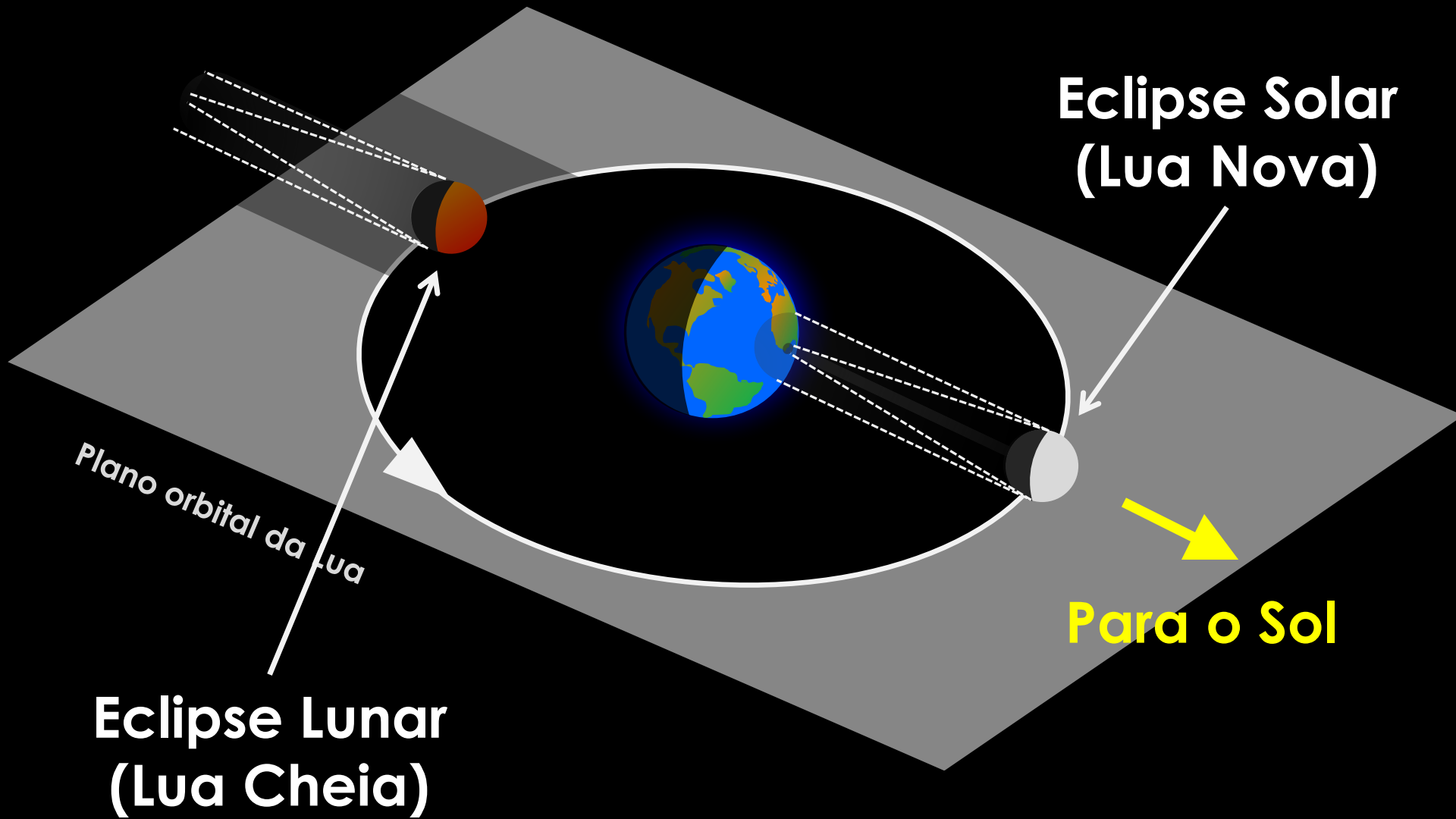


Minicurso básico

Eclipses

André Luiz da Silva
Observatório Dietrich Schiel
/CDCC/USP

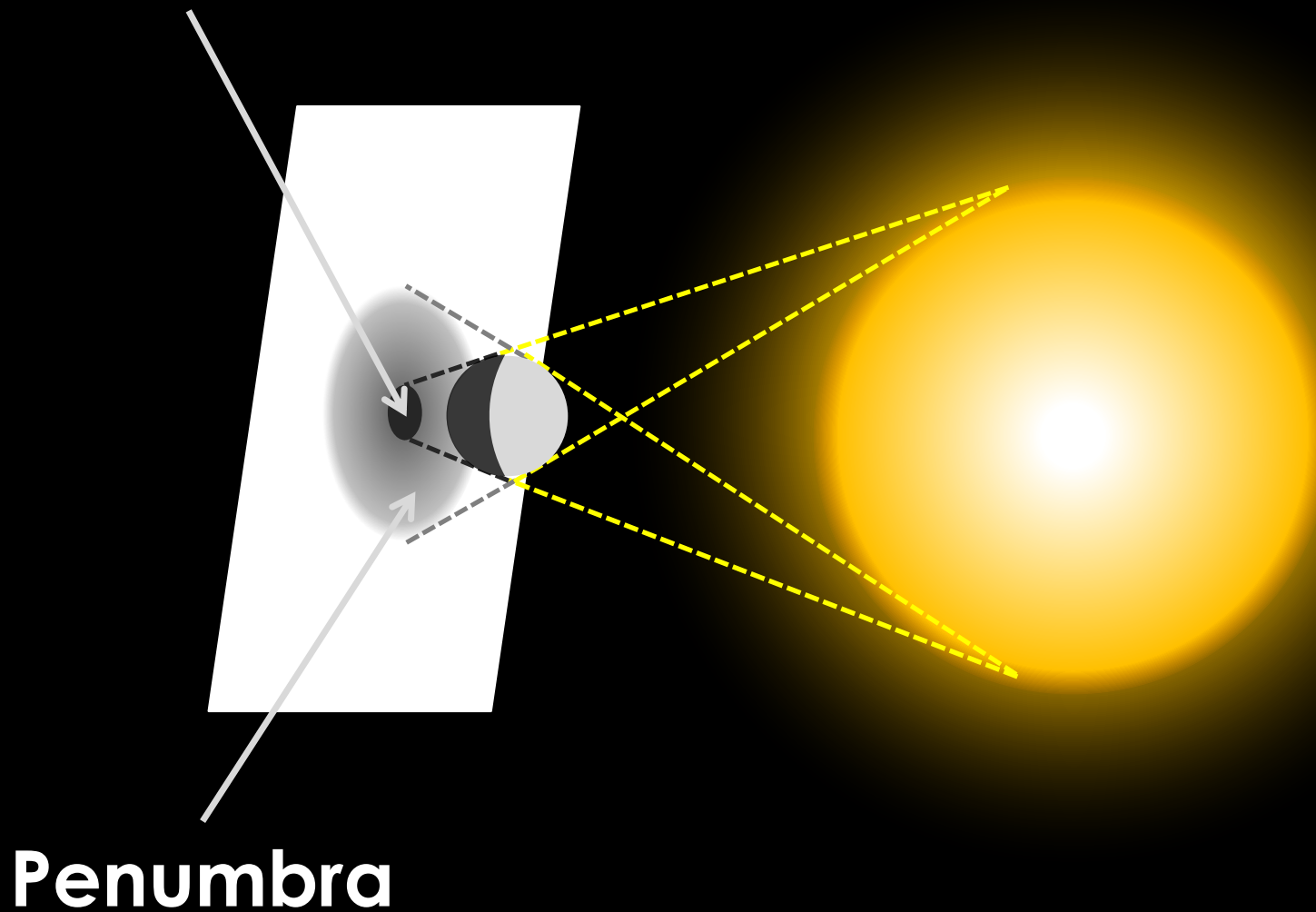
Figura fora de escala



Sobre sombras

Umbra

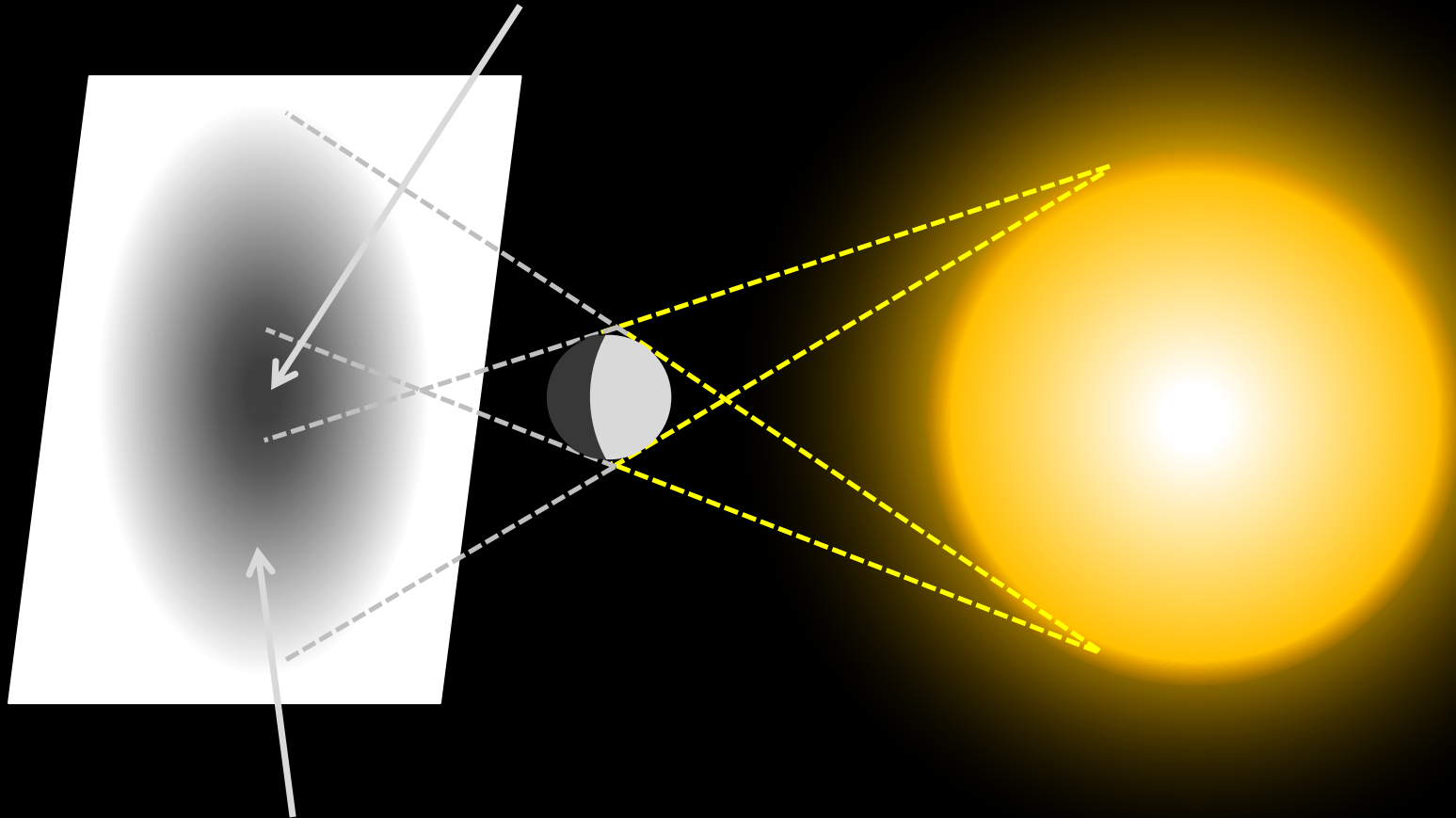
Figura fora de escala



Penumbra

Figura fora de escala

Antiumbra

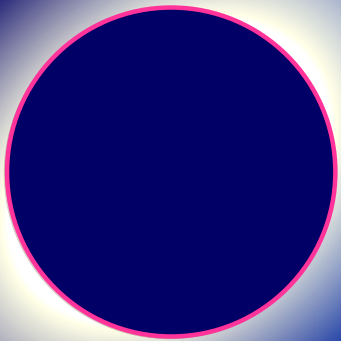


Penumbra

Eclipses Solares

Tipos de eclipses solares

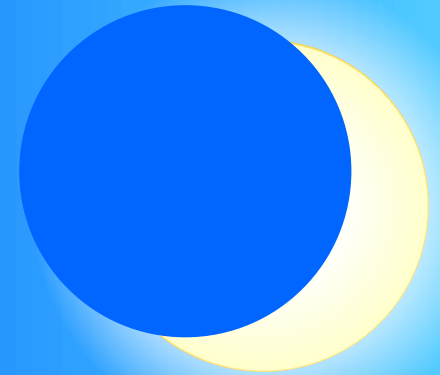
Total



Anular



Parcial



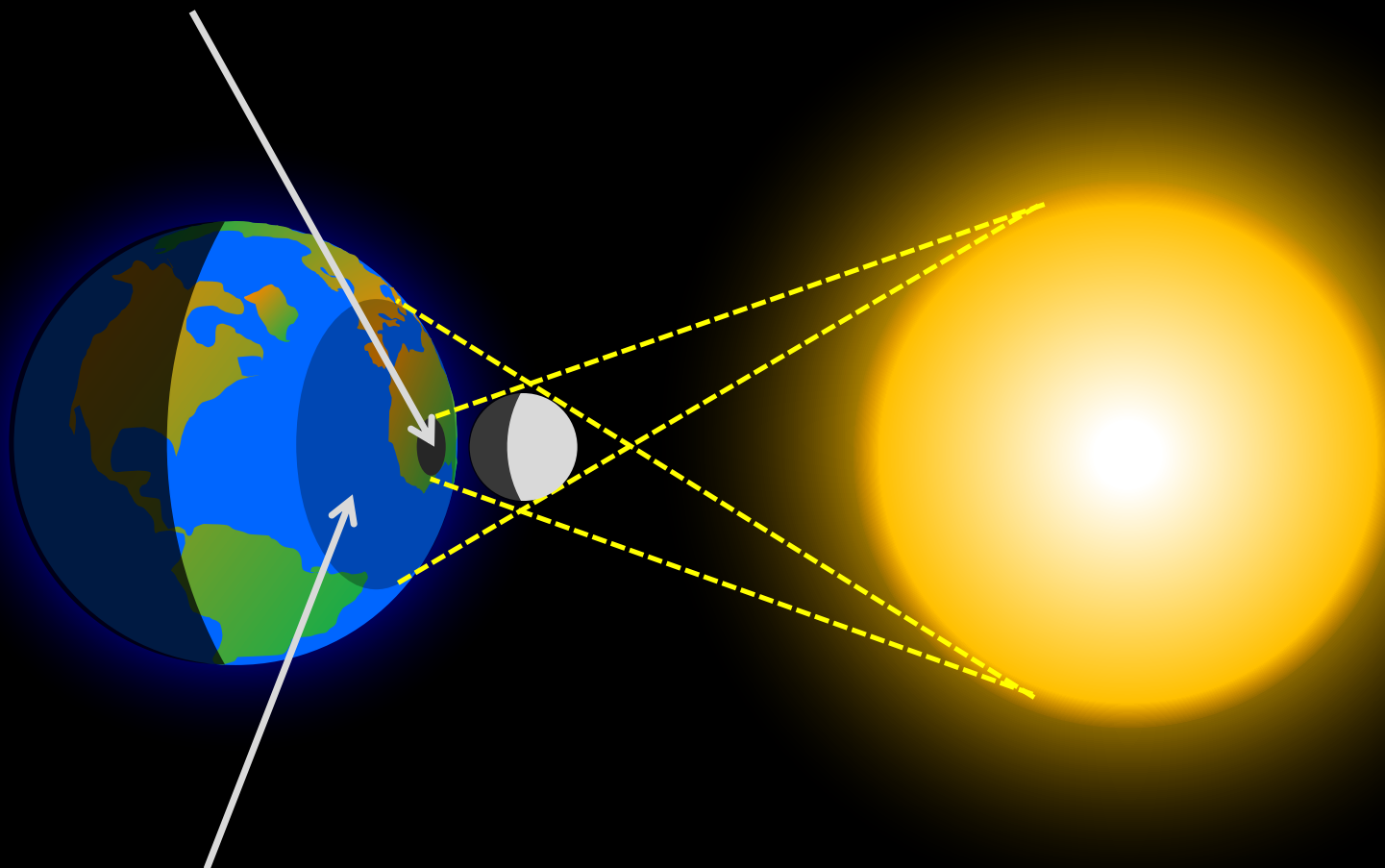
eclipse solar total



Crédito da imagem: NASA/Aubrey Gemignani

Umbra

Figura fora de escala



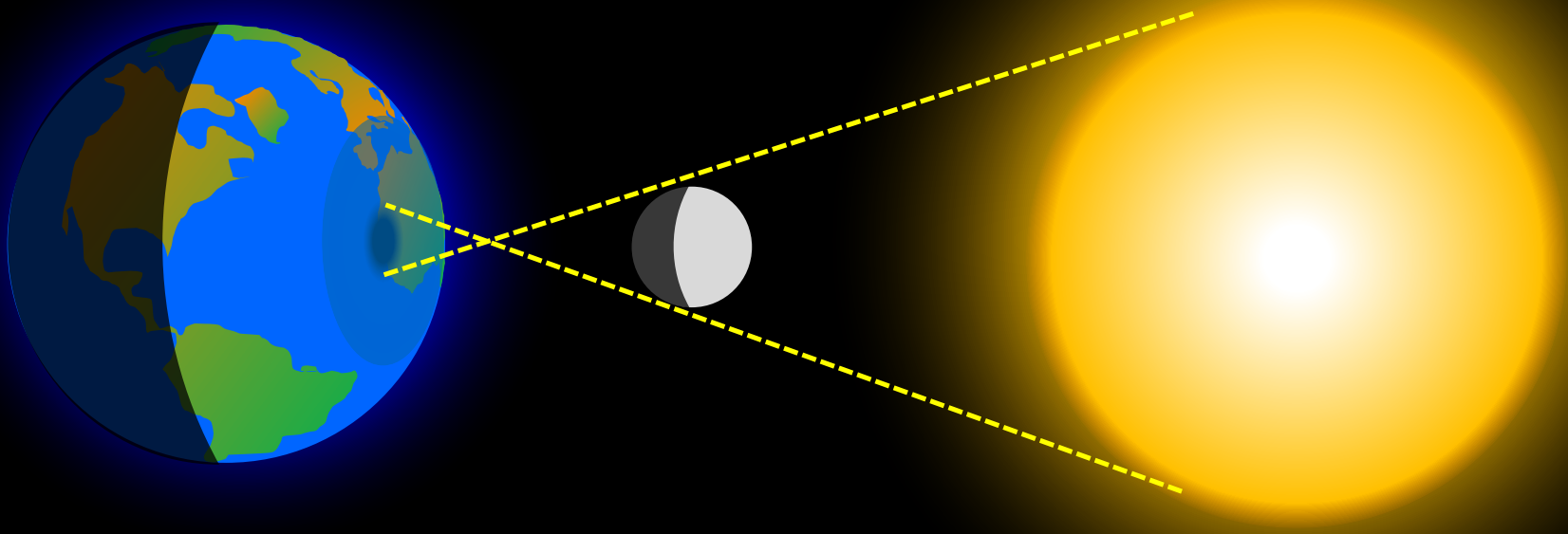
Penumbra

eclipse solar anular



Crédito da imagem: *Wikimedia Commons user Kevin Baird, under c.c.-by-s.a.-3.0.*

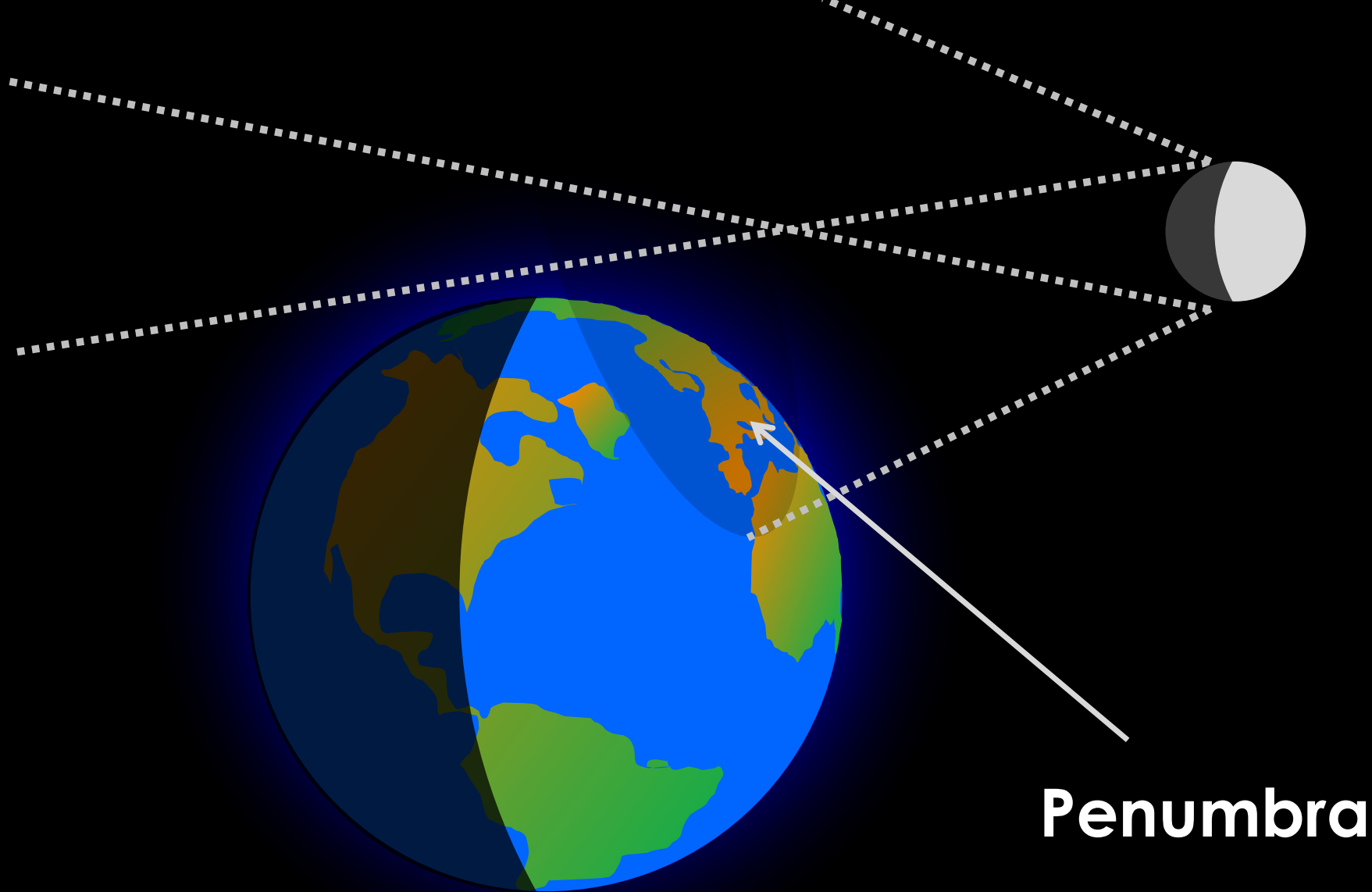
Figura fora de escala



Crédito da imagem: André Luiz da Silva/CDA/CDCC

eclipse solar parcial





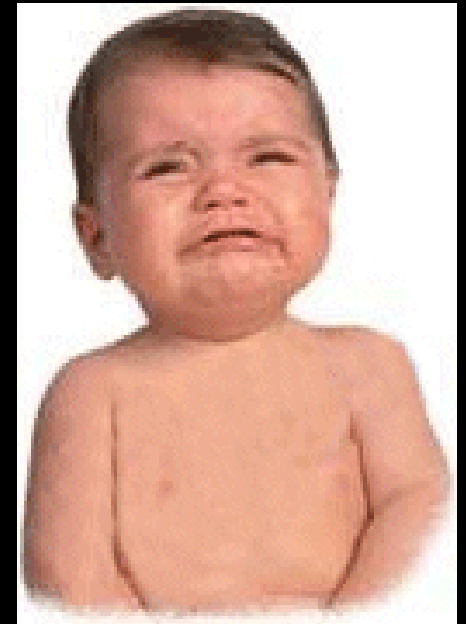
Penumbra

Figura fora de escala

Crédito da imagem: André Luiz da Silva/CDA/CDCC/USP

Próximos eclipses solares totais visíveis do Brasil:

- ❖ 12 de agosto de 2045
- ❖ 11 de maio de 2059



Mas tem um próximo...

❖ 14 de dezembro 2020

❖ **Argentina**



Eclipses Lunares

Tipos de eclipses lunares

Total



**Parcial
umbral**



Penumbral



eclipse lunar total



Crédito da imagem: NASA

Figura fora de escala

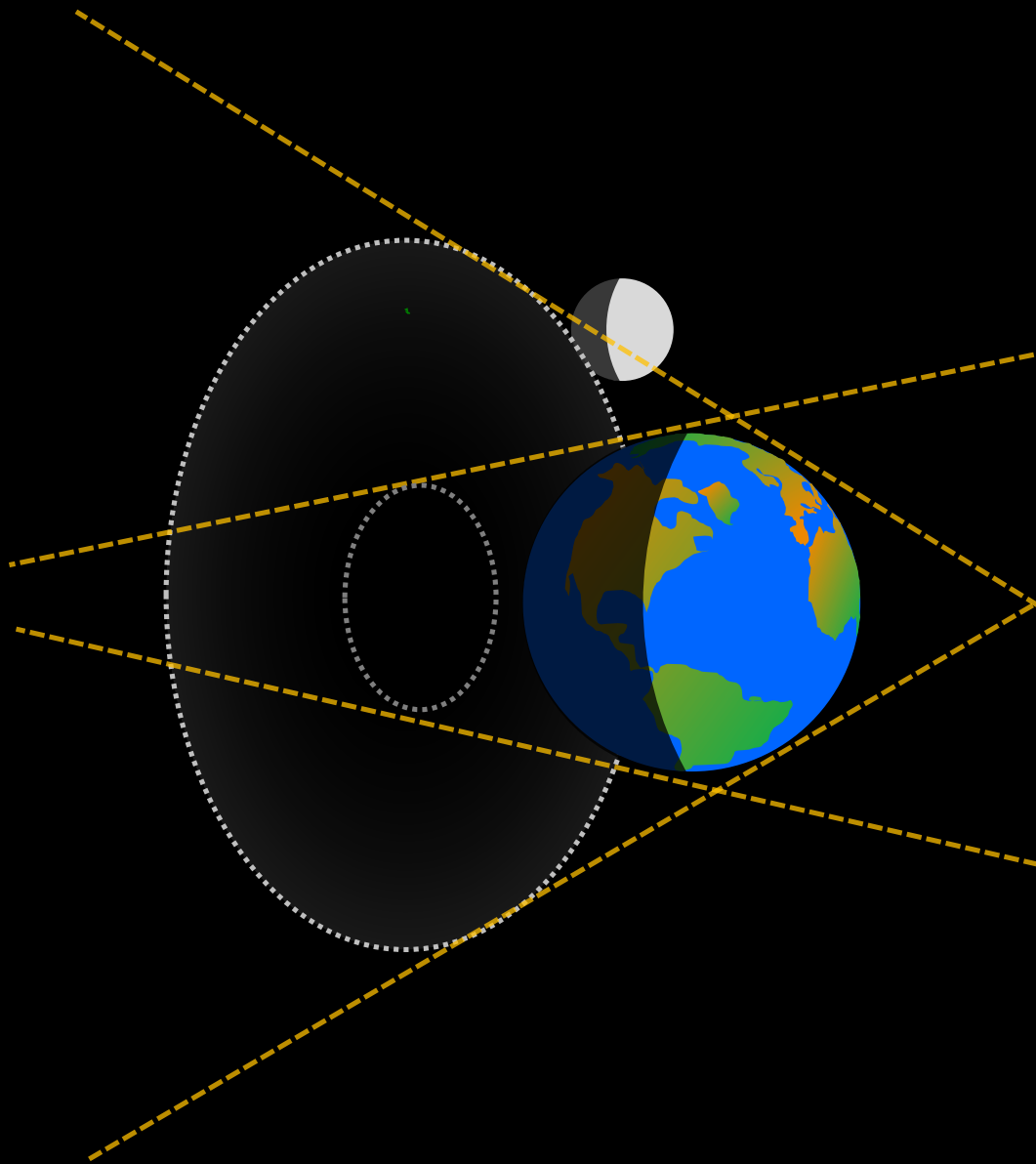
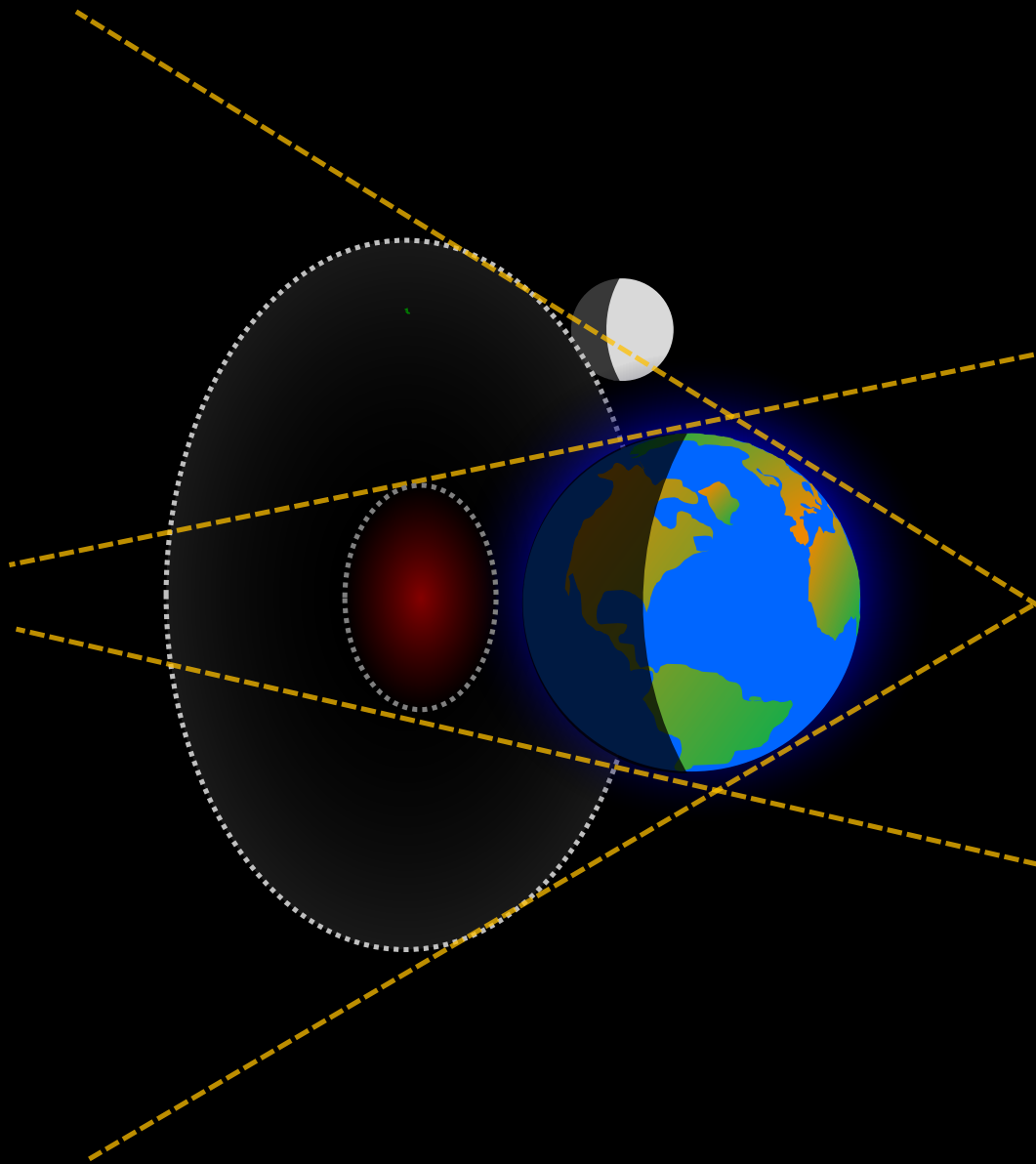
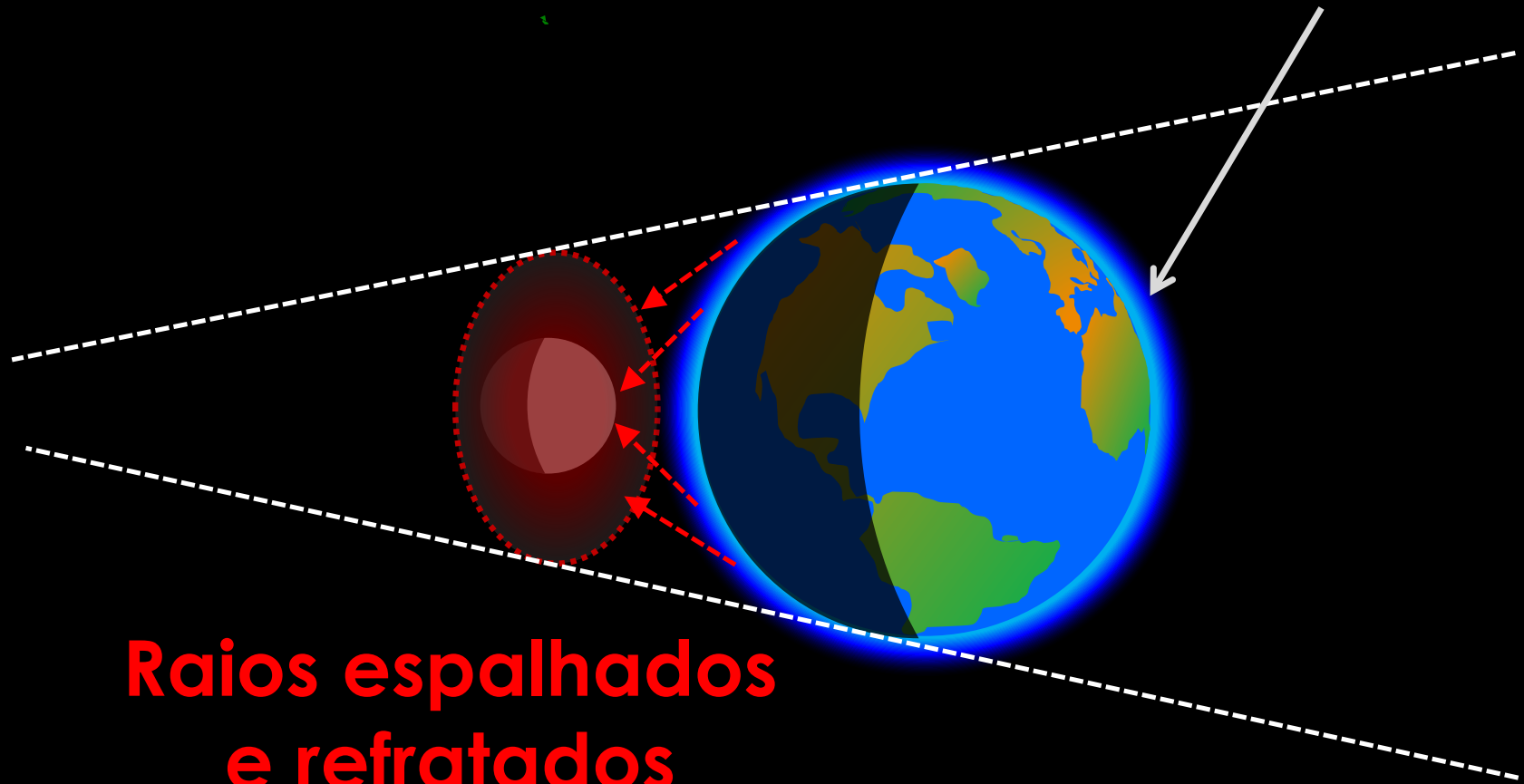


Figura fora de escala



Atmosfera



**Raios espalhados
e refratados**

Figura fora de escala

Eclipse Lunar visto da Lua

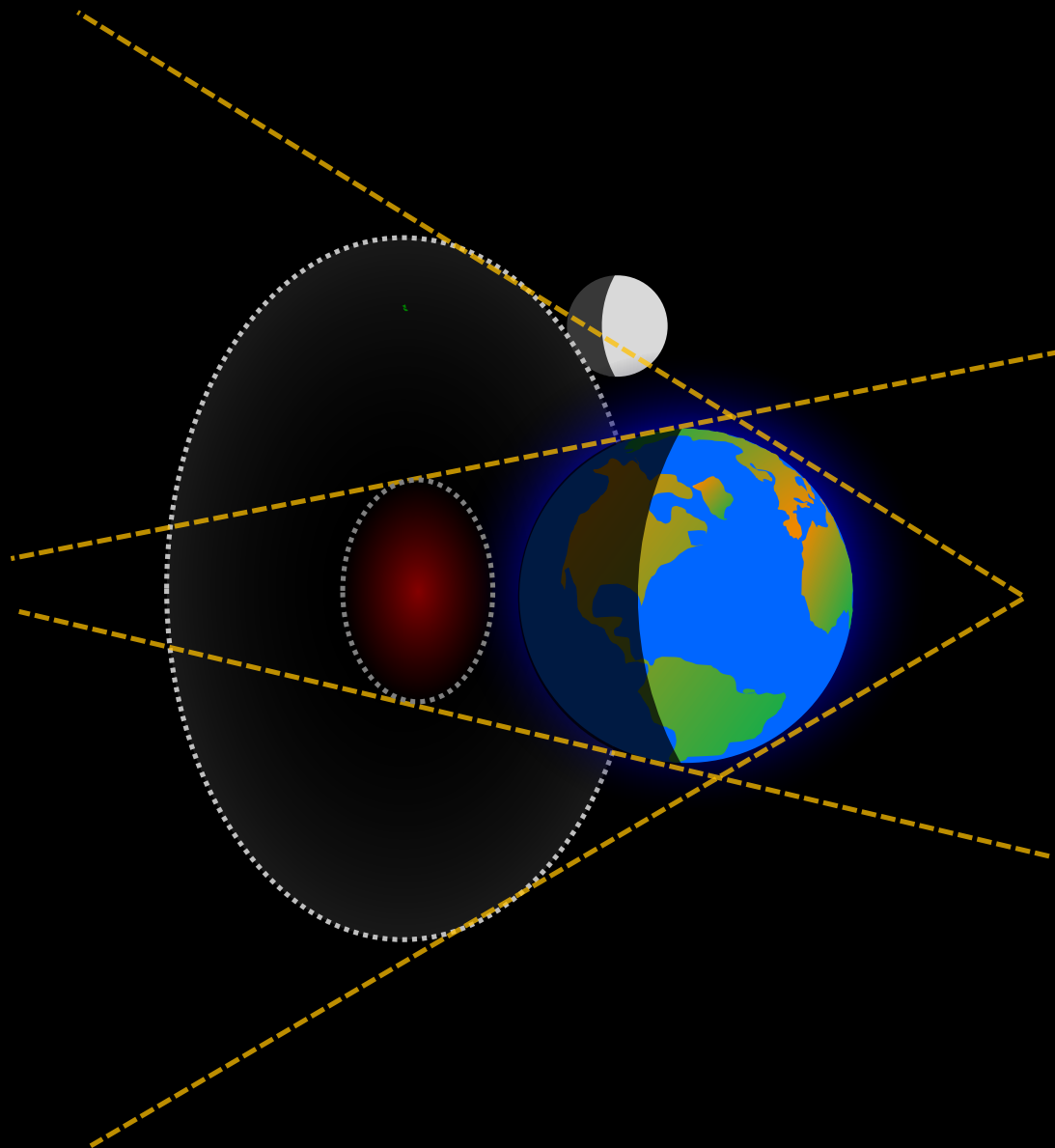


Eclipse lunar parcial umbral



Crédito da imagem: George Tarsoudis

Figura fora de escala



Eclipse lunar penumbral

Before Eclipse

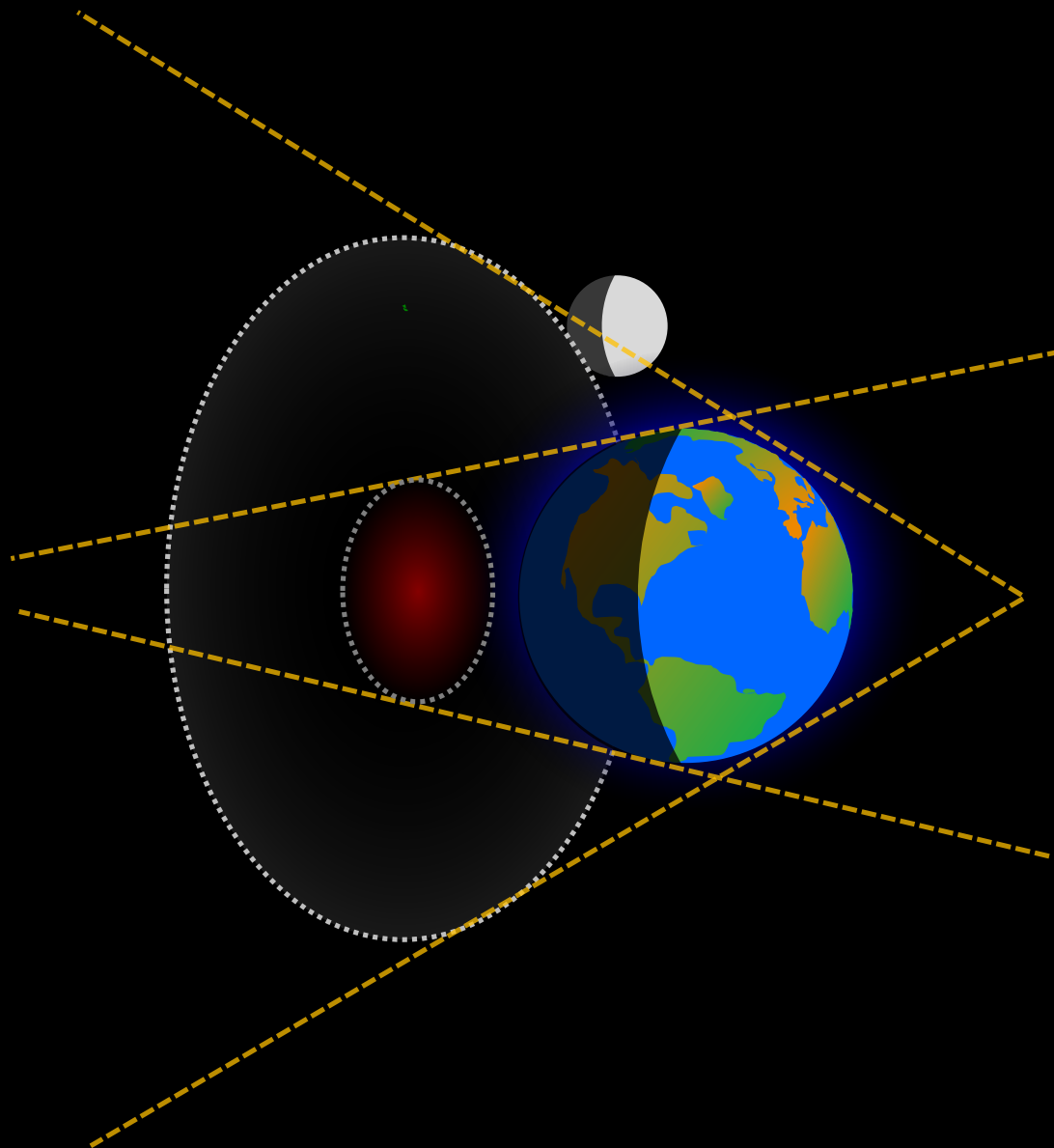


Mid-Eclipse



©2002 F. Espenak, www.MrEclipse.com

Figura fora de escala

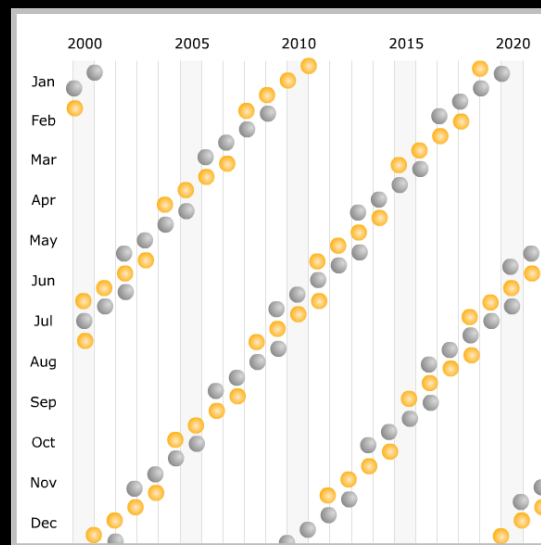


Próximo eclipse lunar total

❖ 16 de maio de 2022



Data e visibilidade dos próximos eclipses



Atenção: esta é uma aplicação em flash; necessário navegador ou player que reproduza conteúdo em flash.

Sites - Eclipses

Homepage for the Working Group on Solar Eclipses da IAU - Com. 46

<http://www.eclipses.info>

NASA - Eclipse Home Page - Fred Espenak

<https://eclipse.gsfc.nasa.gov/eclipse.html>

MrEclipse.com

<http://www.mreclipse.com/Special/SEnext.html>

NASA - Solar eclipse information

<http://umbra.nascom.nasa.gov/eclipse/>

LIADA – Liga Iberoamericana de Astronomia - SEDA

<http://seda.liada.net/>