



The Great American Eclipse

August 21, 2017

Total Solar Eclipse of 2017 August 21

17:36 UTC
2m 19s
50°

Time (UTC)
Duration
Sun's Altitude

17:40 UTC
2m 23s
52°

17:48 UTC
2m 29s
46°

Northern Path Limit

Central Line

Southern Path Limit

Wyoming

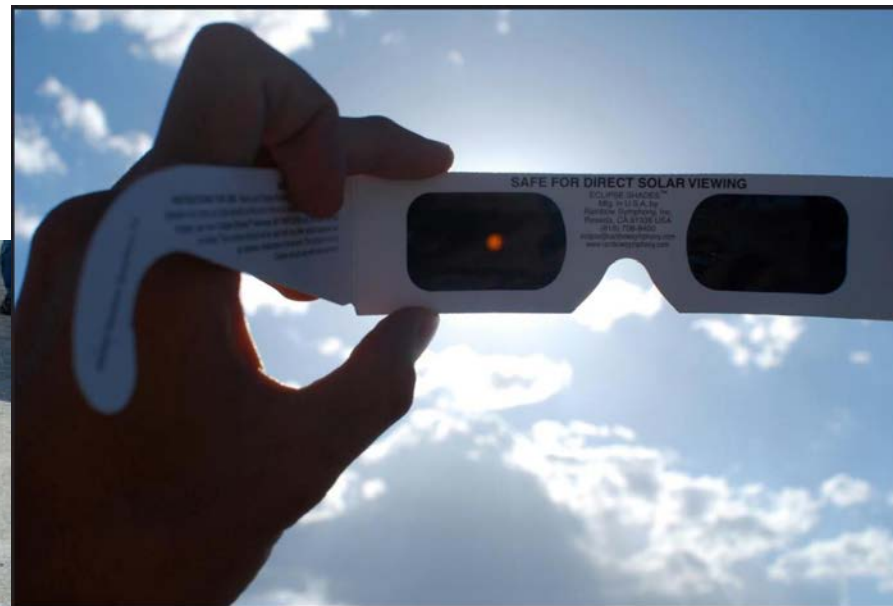
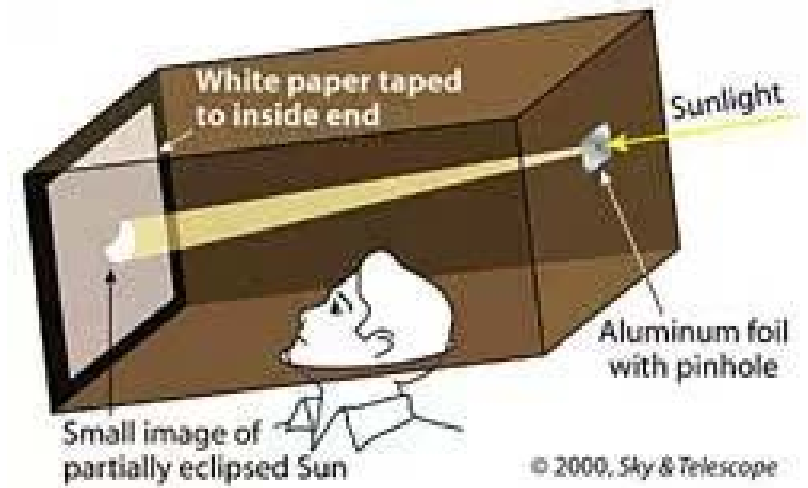
25 mi

Tourist Population Predictions

- Yikes! Everybody hide!!

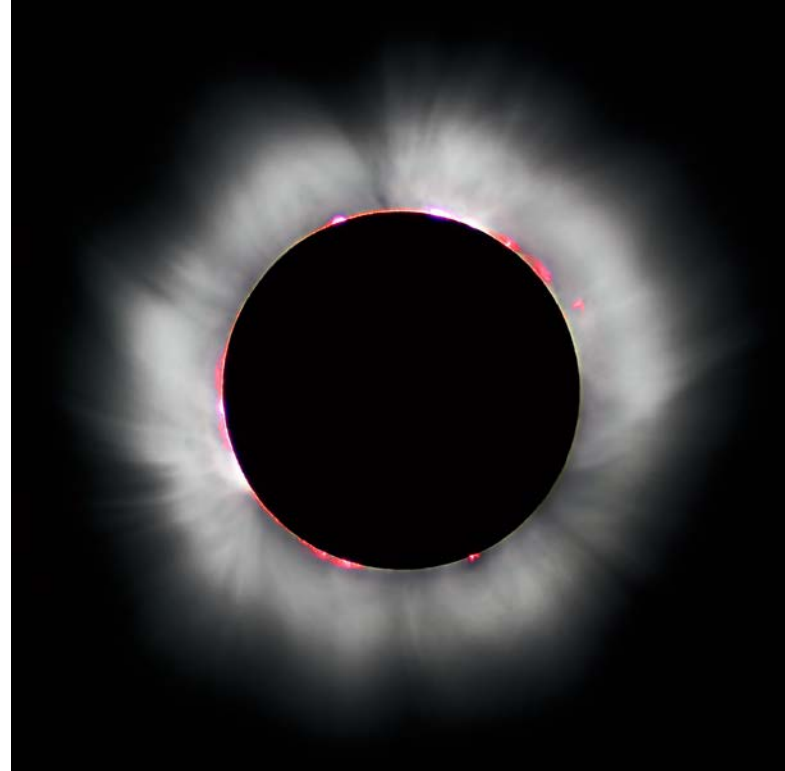
Viewing the Eclipse *Safely*

- Eclipse Glasses
- Welding Glasses: Number 14
- Projections
- Solar Filters



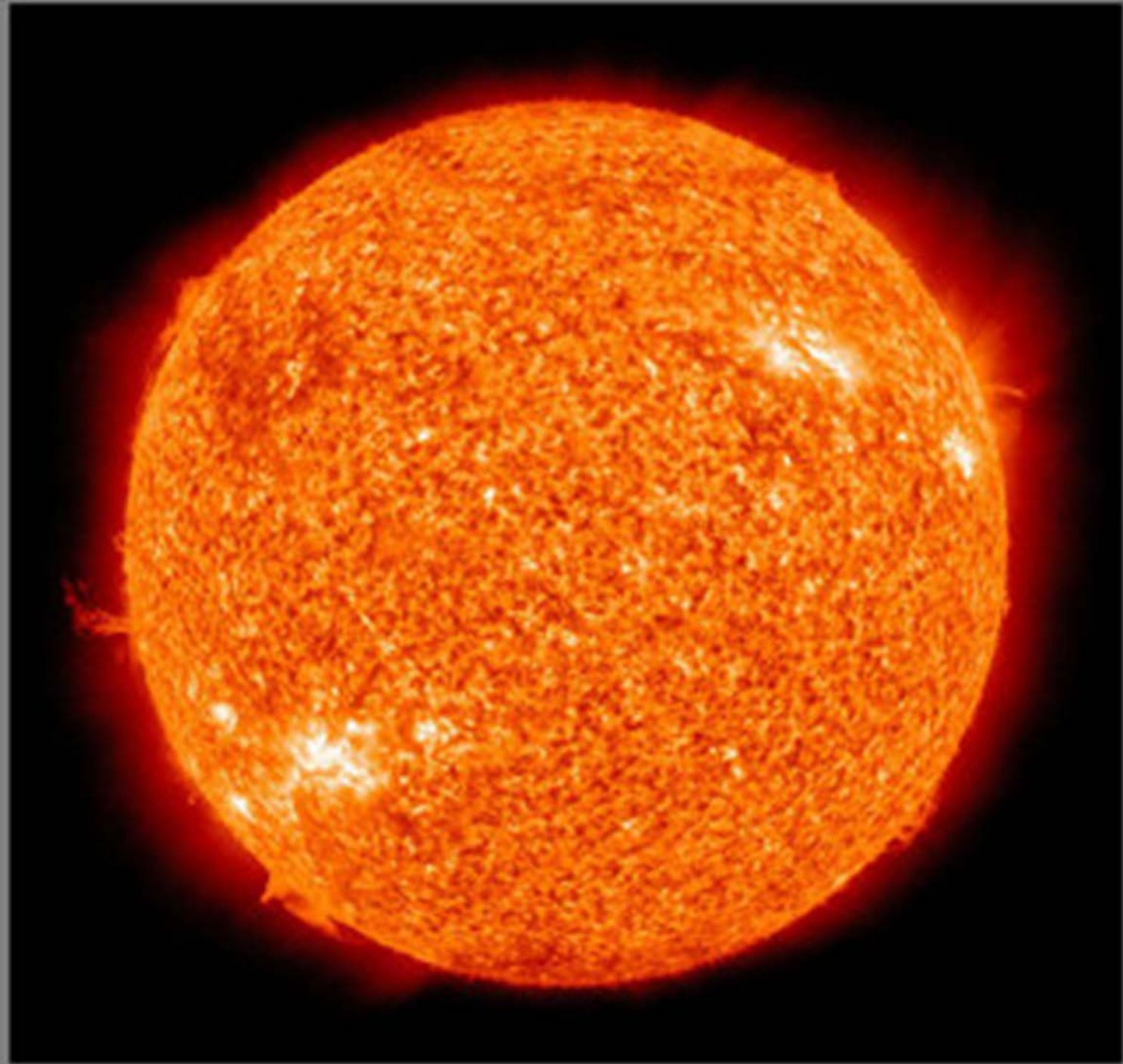
Types of Solar Eclipses

- Total
- Partial
- Annular

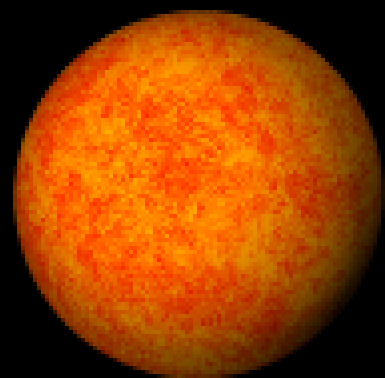
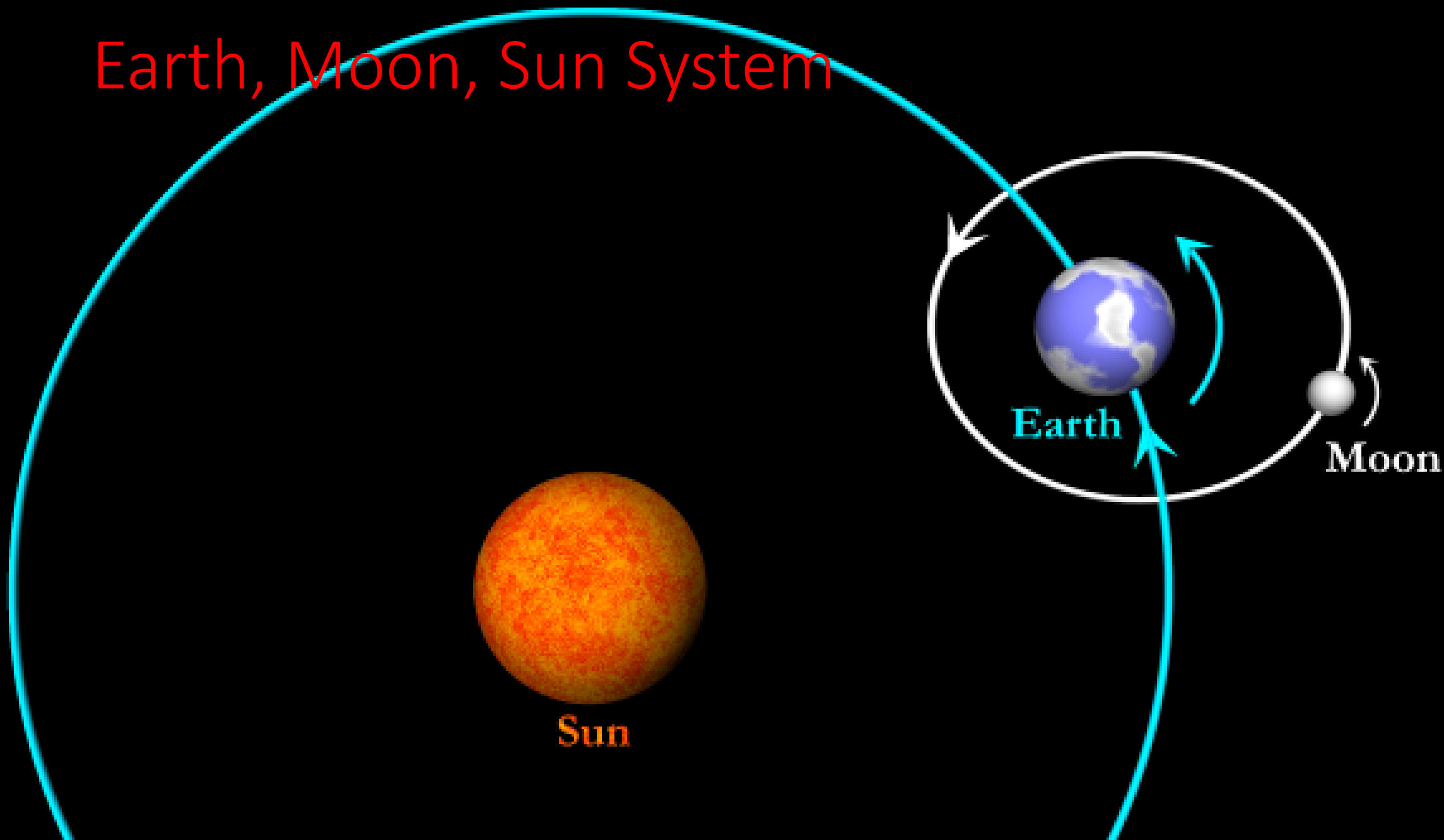


How can the Small Moon cover the Big Sun?

- Moon's Diameter: 2,159 miles
- Sun's Diameter: 864,576 miles



Earth, Moon, Sun System



Sun



Earth



Moon

Lunar Phases

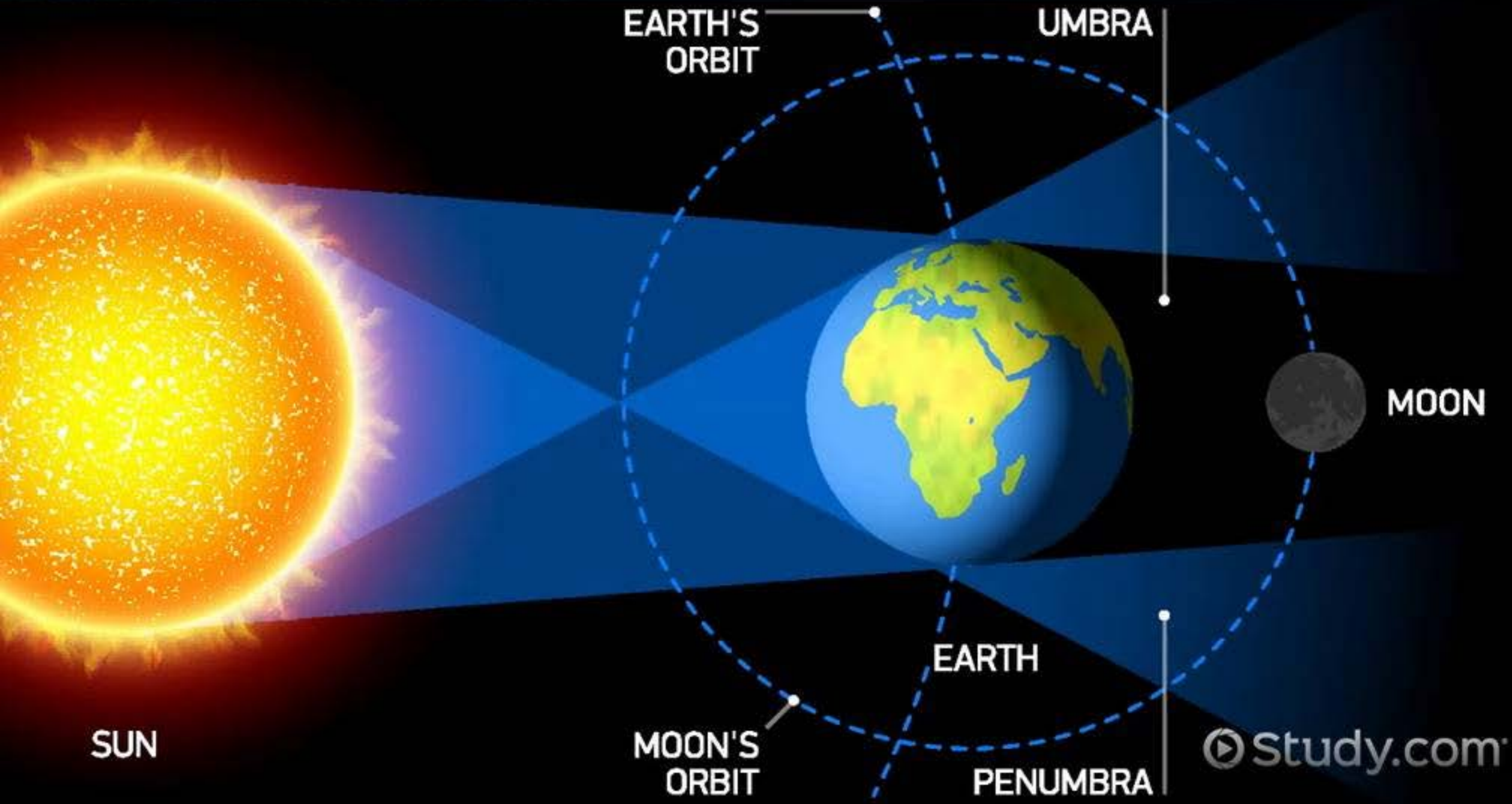
- Can the Moon be seen during the day?



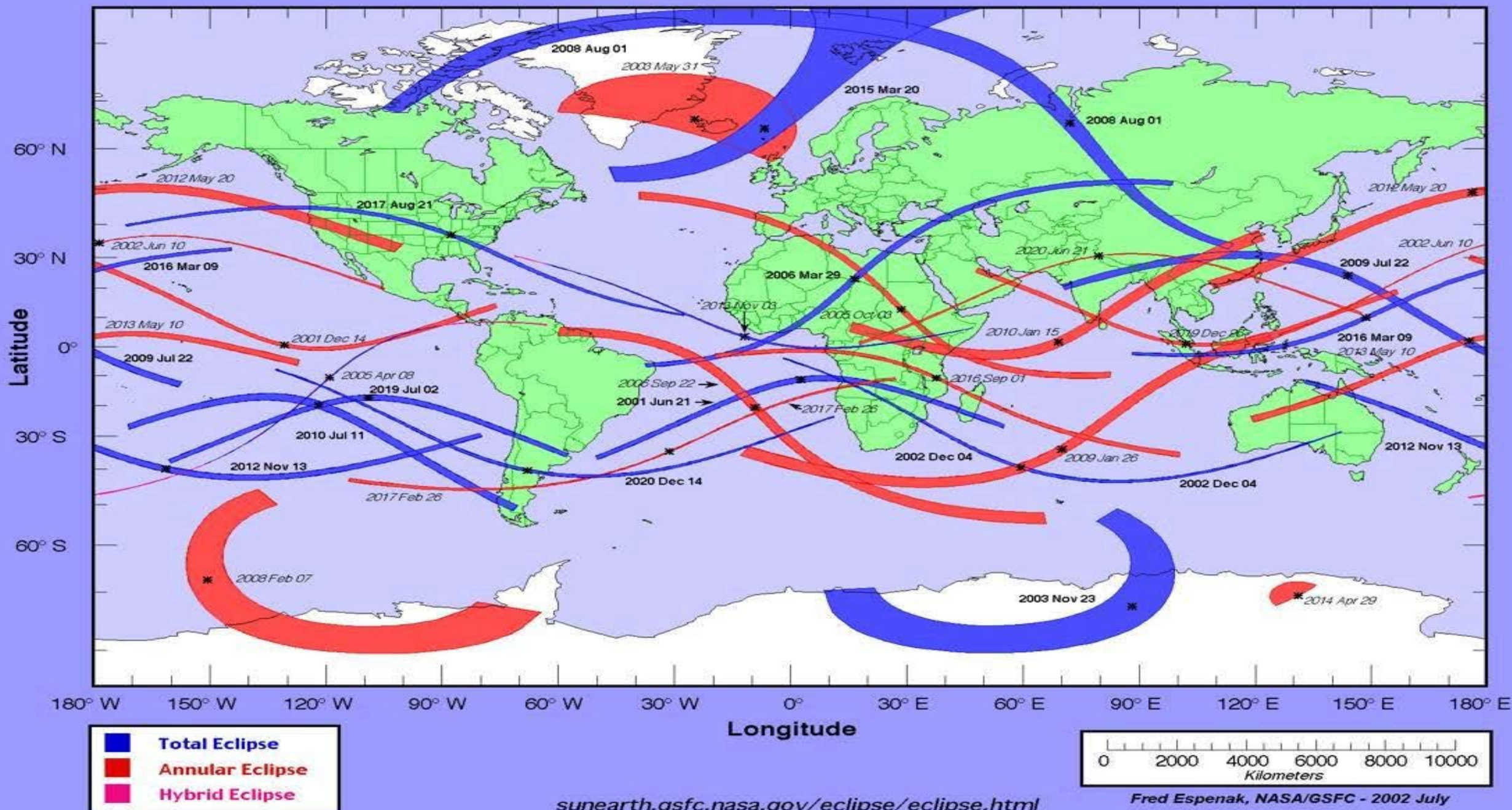
Solar *and*
Lunar Eclipses



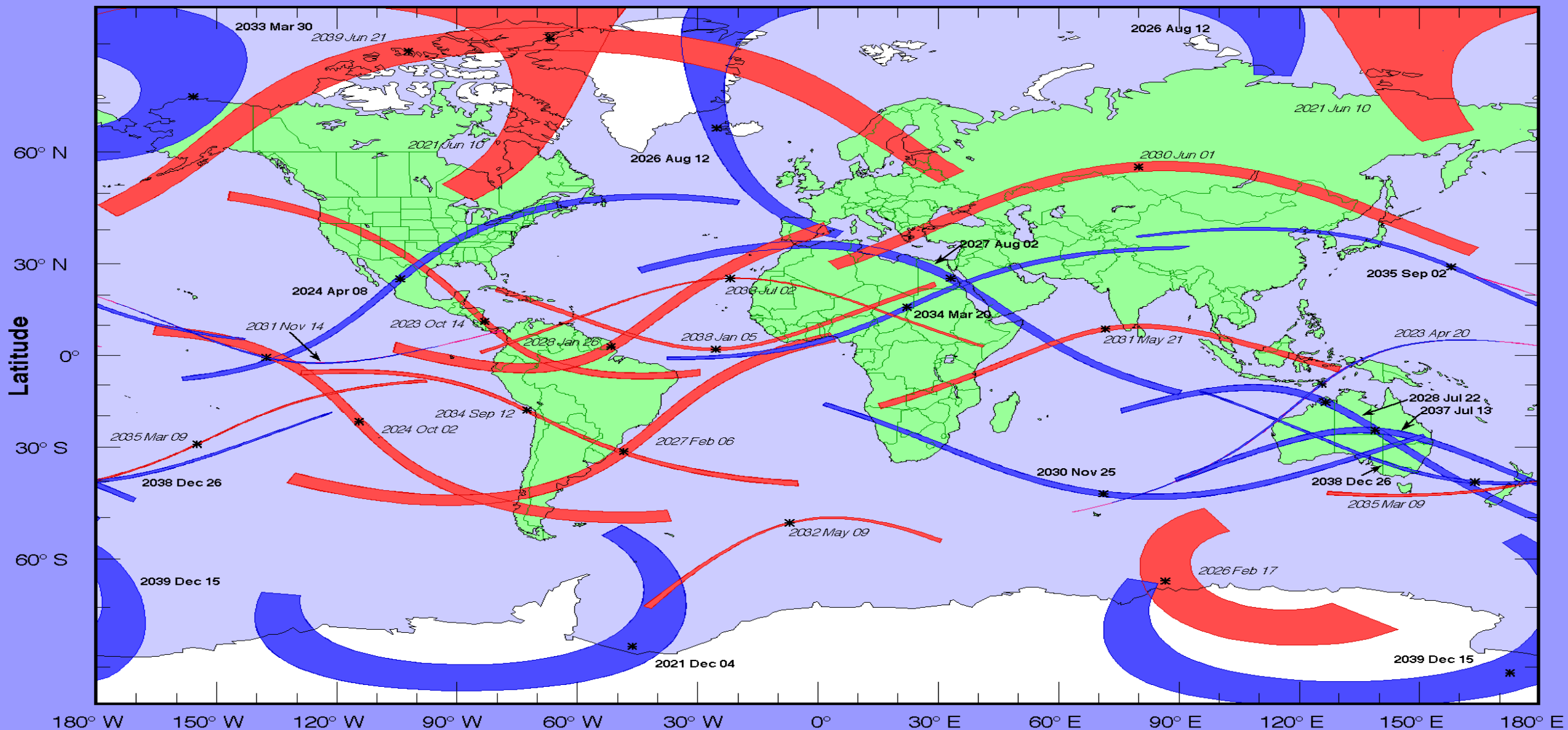
LUNAR ECLIPSE DEFINITION



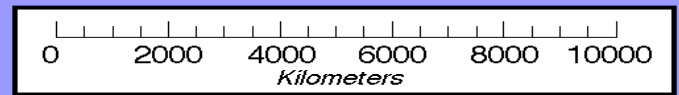
Total and Annular Solar Eclipse Paths: 2001 – 2020



Total and Annular Solar Eclipse Paths: 2021 – 2040



	Total Eclipse
	Annular Eclipse
	Hybrid Eclipse



Earth, Moon Scale

- Size
- Distance

- Earth's Diameter
 - 7,917 miles

- Moon's Diameter
 - 2,159 miles

Average Distance: 238,900 miles (30 Earth Diameters)



Inside that distance you can fit every planet in our solar system.



Resources that we used in this workshop can be purchased here:

- The Universe at You Fingertips DVD-ROM
 - <https://myasp.astrosociety.org/product/DV122/theuniverseatyourfingertips20dvdrom.php>
- Eclipse Glasses
 - Rainbow Symphony: <https://www.rainbowsymphony.com/eclipse-glasses/>
 - American Paper Optics: <http://www.eclipseglasses.com/>
- Solar Filter Paper
 - <https://www.optcorp.com/catalogsearch/result/?q=solar+film+sheet+250mm+x+500mm+visual&order=relevance&dir=desc>