

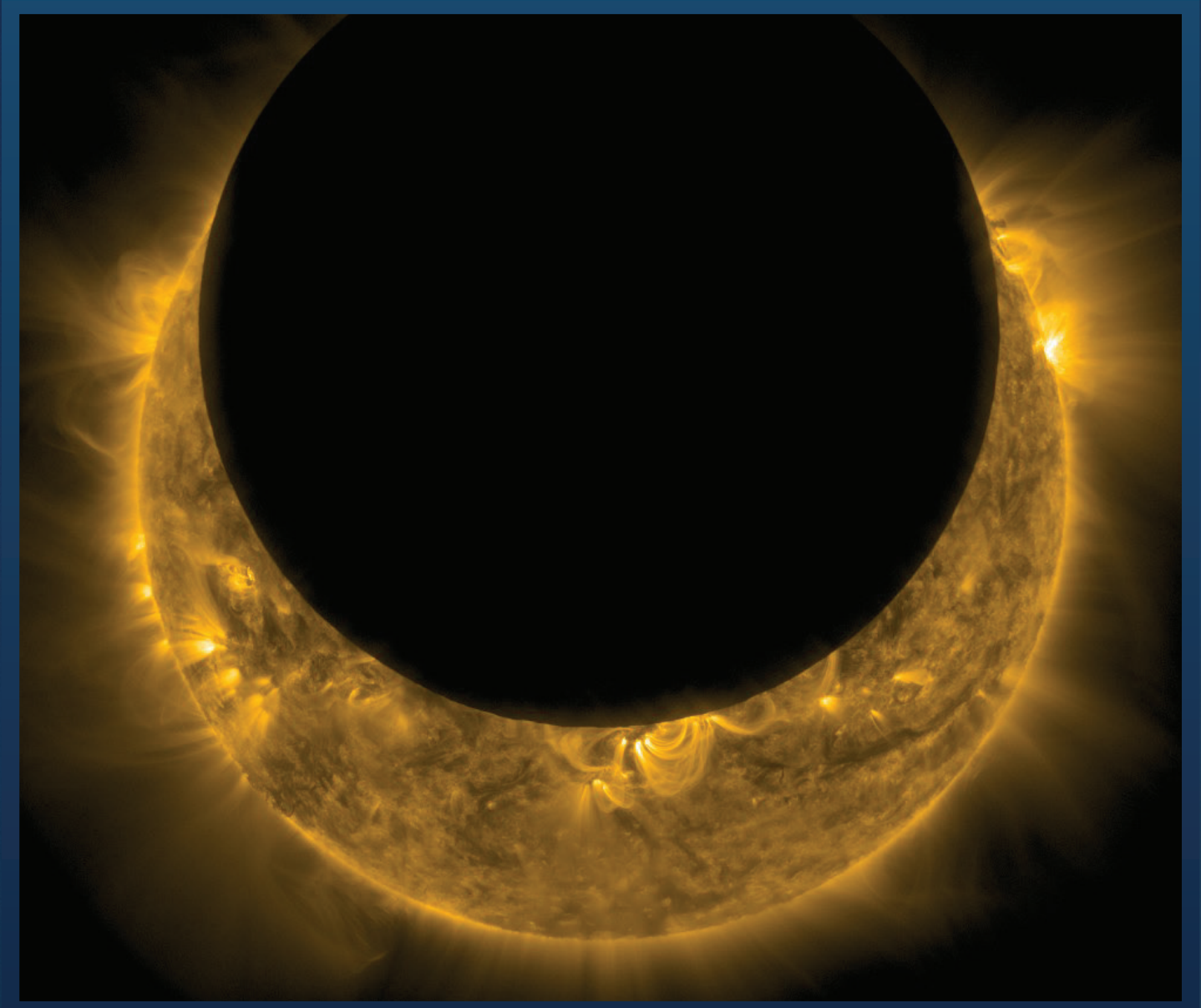
ECLIPSES 101

WHEN OUR STAR AND MOON ALIGN

A solar eclipse occurs when the Moon moves between the Sun and Earth. When this happens, some areas of the Earth are cast into the Moon's shadow.

In places where the Moon completely blocks the Sun, we experience a total solar eclipse, and a dusk-like darkness falls over the Earth.

Where only part of the Sun is covered, we experience a partial eclipse, and the Sun appears as if a bite has been taken out of it.



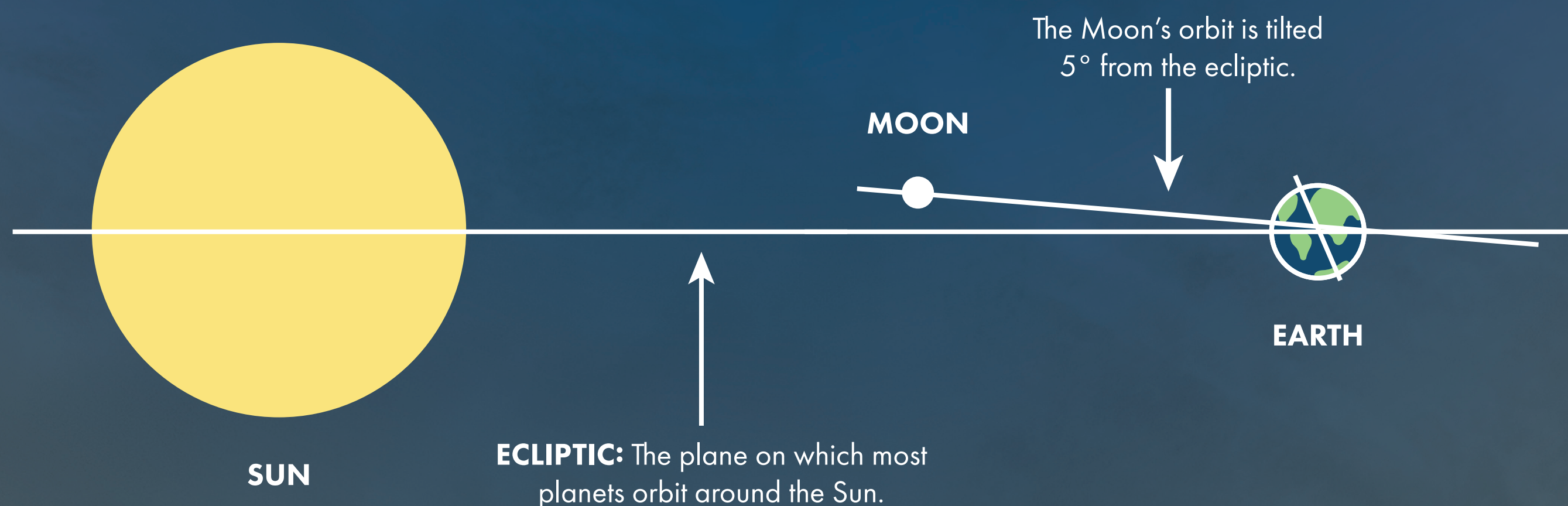
NASA/SDO/AIA/MSAL

The area from where you can see a total eclipse at the same moment is never more than 167 miles.

WHY DON'T WE HAVE A SOLAR ECLIPSE EVERY MONTH?

The Moon orbits around the Earth every month. But the Moon does not pass exactly between the Earth and Sun every month. This is because the orbit of the Moon is at a 5° tilt relative to the plane of our orbit around

the Sun. There are just two times a year when orbits align allowing the possibility of a total solar eclipse. Most of the time the Moon passes well above or below our view of the Sun.



Most of the time the Moon passes well above or below our view of the Sun. Otherwise, we would experience a solar eclipse with every New Moon.

Adapted from Wright Seneres, Science Learning Research Group, Temple University. CC-BY-NC-SA 4.0