

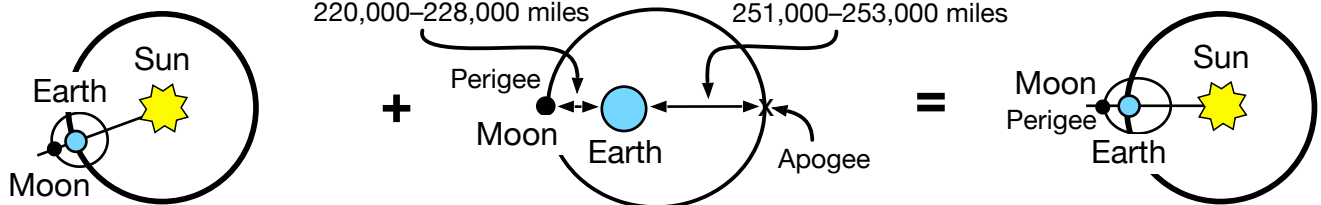


SUPERMOON!



What is it? How super is it?

The Moon revolves around our planet in an ellipse. Consequently, at times it lies farther away, while at other times, it lies closer. Its closest point is called perigee – on average 226,000 miles away – and its farthest point is apogee – averaging 252,000 miles away. The values of perigee and apogee vary from month to month primarily due to the gravitational influence of the Sun.

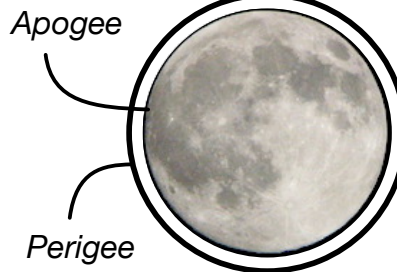


Full Moon:
When the Sun, Earth, and Moon, in that order, lie in a line.

Perigee:
The point in the Moon's orbit where it lies closest to Earth.

Supermoon!
When the Full Moon occurs at or near perigee.

When the dates of the Full Moon and perigee coincide, the Full Moon appears up to 8% wider in the sky than during an average full Moon. It is also almost 16% brighter.



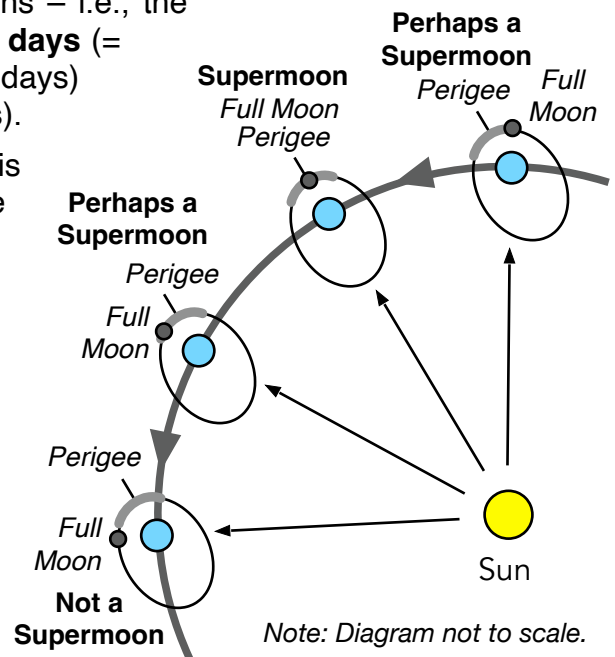
Relative apparent sizes of the Moon when at minimum perigee and at maximum apogee.

Why doesn't a Supermoon occur every month? How rare is it?

• In most months, the moment of when the Moon reaches its full phase doesn't coincide with when it reaches perigee. The time between Full Moons (= 29.5 days) doesn't equal the time between perigees (= 27.5 days). The closest Full Moons – i.e., the **true Supermoons** – recur about every 13 months 18 days (= 413 days) because 14 consecutive Full Moons (= 413.4 days) almost exactly equal 15 returns to perigee (= 413.3 days).

• The definition of what constitutes a Supermoon is arbitrary – it all depends on what maximum distance between the Moon and Earth is chosen. If the Full Moon falls within that arbitrarily specified distance, then a Supermoon occurs.

• If it is defined, as some media outlets do, as occurring when a Full Moon lies within 223,700 miles (360,000 km) of Earth, then it can happen in two, three, or even four consecutive months centered about every 13 months 18 days.



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Astronomical League www.astroleague.org/outreach

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