ECLIPSING ENIGMA

A solar eclipse occurs when the Moon passes between Earth and the Sun, fully or partially blocking the Sun's light from our perspective. Because Earth’s orbit around the Sun and the Moon’s orbit around Earth are not perfect circles, the distances between them change throughout their orbits. During a total eclipse, the distances are such that the Moon covers all of the Sun’s disk area. When the Moon is farther from Earth during an eclipse, it leaves a glowing ring of sunlight shining around the Moon, resulting in an annular eclipse.

On Oct. 14, 2023, a solar eclipse will be visible across North and South America. The Sun, with a radius of 695,700 km, will be 148,523,036 km from Earth. The Moon, with a radius of 1,737 km, will be 388,901 km from Earth. What percentage of the Sun’s disk area will be obscured by the Moon? Will the eclipse be an annular eclipse or a total eclipse?

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